



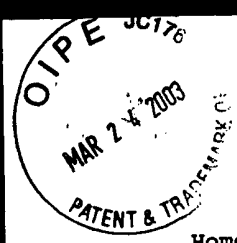
Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

```
1 CGGGCGCGGC GCGGCGCGCG GTGACAGCGG CGCCCGCGCC TCCCGCGCGC
51 TAGGTGTGCG GCGCGCTCCT GGCGAGGACG GAGCGAGCAG ATCTCGCGTG
101 CGCTCGCCGC CCGGCGCAGC CCAGCCCGGC CCGCGCTGG CGCCGCGAGC
151 CGAGGTGTCT CCGGCGCCCG CGCCCGTGTC GCCCGCGTGC CCGCGAGCGG
201 GAGCCGGAGT CGCCCGCGCC CGAGCGCAGC CGAGCGCAGC CCGAGCCCGT
251 CCGCCGCGCG CATGGCCACC ACGGTGACCT GCACCGCTT CACCGACGAG
301 TACCAGCTCT ACGAGGATAT TGGCAAGGGG GCTTTCTCTG TGGTCCGACG
351 CTGTGTCAAG CTCTGCACCG GCCATGAGTA TGCAGCCAAG ATCATCAACA
401 CCAAGAAGCT GTCAGCCAGA GATCACCAGA AGCTGGAGAG AGAGGCTCGG
451 ATCTGCCGCC TTCTGAAGCA TTCCAACATC GTGCGTCTCC ACGACAGCAT
501 CTCCGAGGAG GGCTTCCACT ACCTGGTCTT CGATCTGGTC ACTGGTGGGG
551 AGCTCTTTGA AGACATTGTG GCGAGAGAGT ACTACAGCGA GGCTGATGCC
601 AGTCACTGTA TCCAGCAGAT CCTGGAGGCC GTTCTCCATT GTCACCAAAT
651 GGGGGTCGTC CACAGAGACC TCAAGCCGGA GAACCTGCTT CTGGCCAGCA
701 AGTGCAAAGG GGCTGCAGTG AAGCTGGCAG ACTTCGGCCT AGCTATCGAG
751 GTGCAGGGGG ACCAGCAGGC ATGGTTTGGT TTCGCTGGCA CACCAGGCTA
801 CCTGTCCCCT GAGGTCTTTC GCAAAGAGGC GTATGGCAAG CCTGTGGACA
851 TCTGGGCATG TGGGGTGATC CTGTACATCC TGCTCGTGGG CTACCCACCC
901 TTCTGGGACG AGGACCAGCA CAAGCTGTAC CAGCAGATCA AGGCTGGTGC
951 CTATGACTTC CCGTCCCCTG AGTGGGACAC CGTCACTCCT GAAGCCAAAA
1001 ACCTCATCAA CCAGATGCTG ACCATCAACC CTGCCAAGCG CATCACAGCC
1051 CATGAGGCCC TGAAGCACCC GTGGGTCTGC CAACGCTCCA CGGTAGCATC
1101 CATGATGCAC AGACAGGAGA CTGTGGAGTG TCTGAAAAAG TTCAATGCCA
1151 GGAGAAAGCT CAAGGGAGCC ATCTCACCA CCATGCTGGC CACACGGAAT
1201 TTCTCAGTGG GCAGACAGAC CACCGCTCCG GCCACAATGT CCACCGCGGC
1251 CTCCGGCACC ACCATGGGGC TGGTGAACA AGCCAAGAGT TTAACAACA
1301 AGAAAGCAGA TGGAGTCAAG CCCAGACGA ATAGCACCAA AAACAGTGCA
1351 GCCGCCACCA GCGCCAAAGG GACGCTTCCT CCTGCCGCC TGGAGCCTCA
1401 AACCACCGTC ATCCATAACC CAGTGGACGG GATTAAGGAG TCTTCTGACA
1451 GTGCCAATAC CACCATAGAG GATGAAGACG CTAAGCCCG GAAGCAGGAG
1501 ATCATTAAAG CCACGGAGCA GTCATCGAG GCCGTCAACA ACGGTGACTT
1551 TGAGGCCCTAC GCATTCTACT TCGAGAACCT GCTGGCCAAG AACAGCAAGC
1601 CGATCCACAC GACCATCTG AACCACACG TGCACGTCAT TGGAGAGGAT
1651 GCGCCTGCA TCGCTTACAT CCGGCTCAG CAGTACATTG ACGGGCAGGG
1701 CCGGCCCGC ACCAGCCAGT CTGAGGAGAC CCGCGTGTGG CACCGCCGCG
1751 ACGGCAAGTG GCAGAACGTG CACTTCCACT GCTCGGGCGC GCCTGTGGCC
1801 CCGCTGCAGT GAAGCCAAGG GAGGGGCACA GAATGGGGAA CAGGACACAG
1851 GATCCTAAAC TCCAAGGGGA CTGTCCACCG ATGAACACTC AGAGTGGACA
1901 CCATCTTCCG TCCACGCTGT GCCCAGGACA GCTGTCCCA TCCATGAACA
1951 CAGGGTAAAC ATCTGCCGGG CTCCGCACCA GTGGCTCCCT GGGCCATGGG
2001 ACAGCGGCAG GGCTCACCAC GGACAGCAG TGGCCAGCA GCCGGCCACC
2051 CTGGCGTCCT GGGGCCCTCT CCCCTCCTCT CCCTCTCACC TTGTCACCTC
2101 CACGGAGCTG CCTGTCTGGG ATAATTGGG GATTTTTTTT TCTGGGGGAT
2151 AATTCTTTTG CATGACCCT AAAGAGCAAG CCACACCGGT CTGCTAGCTA
2201 GGTGTCCGCG GTGTGGTG (SEQ ID NO:1)
```

FEATURES:

5'UTR: 1-261
Start Codon: 262
Stop Codon: 1810
3'UTR: 1813

FIGURE 1A



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Homologous proteins:
Top 10 BLAST Hits

			Score	E
CRA 18000005245285	/altid=gi 5326757	/def=gb AAD42035.1 AF07880...	1047	0.0
CRA 18000005199792	/altid=gi 10835006	/def=ref NP_001211.1 cal...	1044	0.0
CRA 18000004938668	/altid=gi 6671660	/def=ref NP_031621.1 calc...	1039	0.0
CRA 18000004937301	/altid=gi 11120682	/def=ref NP_068507.1 Ca+...	1038	0.0
CRA 18000005245287	/altid=gi 5326762	/def=gb AAD42037.1 AF08192...	1001	0.0
CRA 18000005171302	/altid=gi 3668373	/def=gb AAC79460.1 (AF085...	999	0.0
CRA 1000737074531	/altid=gi 6688228	/def=emb CAB65122.1 (AJ252...	986	0.0
CRA 18000005245288	/altid=gi 5326764	/def=gb AAD42038.1 AF08341...	986	0.0
CRA 18000004964693	/altid=gi 466360	/def=gb AAA81938.1 (U06636...	982	0.0
CRA 18000005199791	/altid=gi 4139268	/def=gb AAD03743.1 (AF112...	982	0.0

BLAST dbEST hits:

	Score	E
gi 12801212 /dataset=dbest /taxon=960...	1675	0.0
gi 12868201 /dataset=dbest /taxon=960...	1453	0.0
gi 2053138 /dataset=dbest /taxon=9606 ...	1247	0.0
gi 10213950 /dataset=dbest /taxon=96...	1243	0.0
gi 9324431 /dataset=dbest /taxon=960...	1233	0.0
gi 12921378 /dataset=dbest /taxon=960...	910	0.0

EXPRESSION INFORMATION FOR MODULATORY USE:

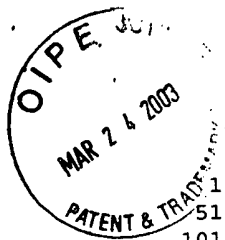
library source:

From BLAST dbEST hits:

- gi|12801212 Fetal brain
- gi|12868201 Fetal brain
- gi|2053138 Testis
- gi|10213950 Lung small cell carcinoma
- gi|9324431 uterus endometrium adenocarcinoma cell libe
- gi|12921378 Fetal brain

Tissue expression from PCR-based tissue screening panels:
hippocampus

FIGURE 1B



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1 MATTVTCTRF TDEYQLYEDI GKGAFSVRR CVKLCTGHEY AAKIINTKKL
51 SARDHQKLER EARICRLKHS SNIVRLHDSI SEEGFHYLVF DLVTGGELFE
101 DIVAREYYSE ADASHCIQOI LEAVLHCHQM GVVHRDLKPE NLLLASKCKG
151 AAVKLADFGL AIEVQGDQQA WFGFAGTPGY LSPEVLRKEA YGKPVDIWAC
201 GVILYILLVG YPPFWEDEQH KLYQQIKAGA YDFPSPEWDT VTPEAKNLIN
251 QMLTINPAKR ITAHEALKHP WVCQRSTVAS MMHRQETVEC LKKFNARRKL
301 KGAILTTMLA TRNFSVGRQT TAPATMSTAA SGTTMGLVEQ AKSLLNKKAD
351 GVKPQTNSTK NSAAATSPKG TLPPAALEPQ TTVIHNPDVG IKESSDSANT
401 TIEDEDAKAR KQEIIKTEQ LIEAVNNGDF EAYAFYFENL LAKNSKPIHT
451 TILNPHVHVI GEDAACIAYI RLTQYIDGQG RPRTSQSEET RVWHRRDGGW
501 QNVHFHCSGA PVAPLQ (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 3

1 313-316 NFSV (residues 313-316 of SEQ ID NO:2)
2 357-360 NSTK (residues 357-360 of SEQ ID NO:2)
3 399-402 NTTI (residues 399-402 of SEQ ID NO:2)

[2] PDOC00004 PS00004 CAMP_PHOSPHO_SITE
cAMP- and cGMP-dependent protein kinase phosphorylation site

Number of matches: 2

1 48-51 KKLS (residues 48-51 of SEQ ID NO:2)
2 259-262 KRIT (residues 259-262 of SEQ ID NO:2)

[3] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 4

1 47-49 TKK
2 51-53 SAR
3 358-360 STK
4 367-369 SPK

[4] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

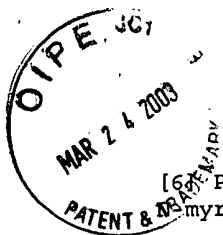
Number of matches: 9

1 36-39 TGHE (residues 36-39 of SEQ ID NO:2)
2 51-54 SARD (residues 51-54 of SEQ ID NO:2)
3 79-82 SISE (residues 79-82 of SEQ ID NO:2)
4 94-97 TGGE (residues 94-97 of SEQ ID NO:2)
5 109-112 SEAD (residues 109-112 of SEQ ID NO:2)
6 262-265 TAHE (residues 262-265 of SEQ ID NO:2)
7 400-403 TTIE (residues 400-403 of SEQ ID NO:2)
8 401-404 TIED (residues 401-404 of SEQ ID NO:2)
9 485-488 SQSE (residues 485-488 of SEQ ID NO:2)

[5] PDOC00007 PS00007 TYR_PHOSPHO_SITE
Tyrosine kinase phosphorylation site

9-17 RFTDEYQLY (residues 9-17 of SEQ ID NO:2)

FIGURE 2A



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[6] PDOC00008 PS00008 MYRISTYL
myristoylation site

Number of matches: 3

- 1 302-307 GAILTT (residues 302-307 of SEQ ID NO:2)
- 2 332-337 GTTMGL (residues 332-337 of SEQ ID NO:2)
- 3 390-395 GIKESS (residues 390-395 of SEQ ID NO:2)

[7] PDOC00100 PS00107 PROTEIN_KINASE_ATP
Protein kinases ATP-binding region signature

20-43 IGKGAFSVVRRRCVKLCTGHEYAAK (residues 20-43 of SEQ ID NO:2)

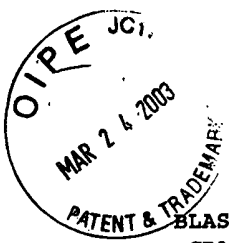
[8] PDOC00100 PS00108 PROTEIN_KINASE_ST
Serine/Threonine protein kinases active-site signature

132-144 VVHRDLKPENLLL (residues 132-144 of SEQ ID NO:2)

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	195	215	1.665	Certain
2	319	339	1.301	Certain

FIGURE 2B



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BLAST Alignment to Top Hit:

>CRA|18000005245285 /altid=gi|5326757 /def=gb|AAD42035.1|AF078803_1
(AF078803) calcium/calmodulin-dependent protein kinase II
beta subunit; CAM2 [Homo sapiens] /org=Homo sapiens
/taxon=9606 /dataset=nraa /length=542
Length = 542

Score = 1047 bits (2678), Expect = 0.0
Identities = 516/542 (95%), Positives = 516/542 (95%), Gaps = 26/542 (4%)
Frame = +1

Query: 1 MATTVTCTRFTDEYQLYEDIGKGAFSVVRRVCVKLCTGHEYAAKIINTKKLSARDHQKLER 180
MATTVTCTRFTDEYQLYEDIGKGAFSVVRRVCVKLCTGHEYAAKIINTKKLSARDHQKLER
Sbjct: 1 MATTVTCTRFTDEYQLYEDIGKGAFSVVRRVCVKLCTGHEYAAKIINTKKLSARDHQKLER 60

Query: 181 EARICRLLKHSNIVRLHDSISEEGFHYLVFDLVTGGELFEDIVAREYYSEADASHCIQQI 360
EARICRLLKHSNIVRLHDSISEEGFHYLVFDLVTGGELFEDIVAREYYSEADASHCIQQI
Sbjct: 61 EARICRLLKHSNIVRLHDSISEEGFHYLVFDLVTGGELFEDIVAREYYSEADASHCIQQI 120

Query: 361 LEAVLHCHQMGMVVRDLKPENLLLASKCKGAAVKLADFGLAIEVQGDQQAWFGFAGTPGY 540
LEAVLHCHQMGMVVRDLKPENLLLASKCKGAAVKLADFGLAIEVQGDQQAWFGFAGTPGY
Sbjct: 121 LEAVLHCHQMGMVVRDLKPENLLLASKCKGAAVKLADFGLAIEVQGDQQAWFGFAGTPGY 180

Query: 541 LSPEVLRKEAYGKPVDIWACGVILYILLVGYPFWDQHKLYQQIKAGAYDFPSPWDT 720
LSPEVLRKEAYGKPVDIWACGVILYILLVGYPFWDQHKLYQQIKAGAYDFPSPWDT
Sbjct: 181 LSPEVLRKEAYGKPVDIWACGVILYILLVGYPFWDQHKLYQQIKAGAYDFPSPWDT 240

Query: 721 VTPEAKNLINQMLTINPAKRITAHEALKHPWVCQRSTVASMMHRQETVECLKKFNARRKL 900
VTPEAKNLINQMLTINPAKRITAHEALKHPWVCQRSTVASMMHRQETVECLKKFNARRKL
Sbjct: 241 VTPEAKNLINQMLTINPAKRITAHEALKHPWVCQRSTVASMMHRQETVECLKKFNARRKL 300

Query: 901 KGAILTTMLATRNFSVGRQTTAPATMSTAASGTTMGLVEQAKSLLNKKADGVKQTNSTK 1080
KGAILTTMLATRNFSVGRQTTAPATMSTAASGTTMGLVEQAKSLLNKKADGVKQTNSTK
Sbjct: 301 KGAILTTMLATRNFSVGRQTTAPATMSTAASGTTMGLVEQAKSLLNKKADGVKQTNSTK 360

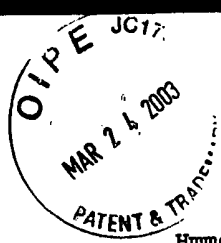
Query: 1081 NSAAATSPKGTLPAALEPQTTVIHNPVDGIKESSDSANTTIEDEDAKARKQEI IKTTEQ 1260
NSAAATSPKGTLPAALEPQTTVIHNPVDGIKESSDSANTTIEDEDAKARKQEI IKTTEQ
Sbjct: 361 NSAAATSPKGTLPAALEPQTTVIHNPVDGIKESSDSANTTIEDEDAKARKQEI IKTTEQ 420

Query: 1261 LIEAVNNGDFEAYA-----FYFENLLAKNSKPIHTTILN 1362
LIEAVNNGDFEAYA FYFENLLAKNSKPIHTTILN
Sbjct: 421 LIEAVNNGDFEAYAKICDPLTSFEPEALGNLVEGMDFHRFYFENLLAKNSKPIHTTILN 480

Query: 1363 PHVHVIGEDAACIAYIRLTQYIDGQGRPRTSQSEETRVWHRRDGKWQNVHFCSGAPVAP 1542
PHVHVIGEDAACIAYIRLTQYIDGQGRPRTSQSEETRVWHRRDGKWQNVHFCSGAPVAP
Sbjct: 481 PHVHVIGEDAACIAYIRLTQYIDGQGRPRTSQSEETRVWHRRDGKWQNVHFCSGAPVAP 540

Query: 1543 LQ 1548 (SEQ ID NO:2)
LQ
Sbjct: 541 LQ 542 (SEQ ID NO:4)

FIGURE 2C



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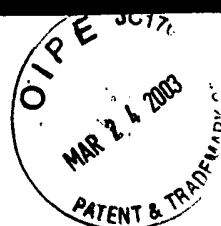
Hammer search results (Pfam):

Model	Description	Score	E-value	N
PF00069	Eukaryotic protein kinase domain	306.2	3.9e-88	1
CE00022	CE00022 MAGUK_subfamily_d	293.8	1.3e-86	1
CE00359	E00359 bone_morphogenetic_protein_receptor	15.0	0.0015	1
CE00031	CE00031 VEGFR	0.9	2.1	1
CE00287	CE00287 PTK_Eph_orphan_receptor	-65.4	0.00046	1
CE00292	CE00292 PTK_membrane_span	-77.0	0.00018	1
CE00291	CE00291 PTK_fgf_receptor	-93.1	0.0021	1
CE00286	E00286 PTK_EGF_receptor	-132.2	0.0059	1
CE00290	CE00290 PTK_Trk_family	-161.3	0.00033	1
CE00016	CE00016 GSK_glycogen_synthase_kinase	-196.7	9.2e-06	1

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
CE00359	1/1	132	186 ..	272	327 ..	15.0	0.0015
CE00031	1/1	133	205 ..	1068	1139 ..	0.9	2.1
CE00286	1/1	14	252 ..	1	263 []	-132.2	0.0059
CE00290	1/1	15	253 ..	1	282 []	-161.3	0.00033
CE00291	1/1	14	267 ..	1	285 []	-93.1	0.0021
CE00292	1/1	14	267 ..	1	288 []	-77.0	0.00018
CE00287	1/1	14	270 ..	1	260 []	-65.4	0.00046
PF00069	1/1	14	272 ..	1	278 []	306.2	3.9e-88
CE00022	1/1	10	305 ..	13	316 ..	293.8	1.3e-86
CE00016	1/1	1	343 [.	1	433 []	-196.7	9.2e-06

FIGURE 2D



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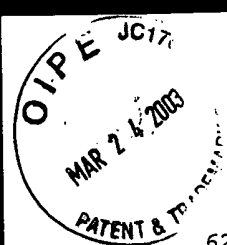
1 GAGCTGCTGT GTCTCTGTCC CCAGGGGCAG AGGGGCTGTG GGGTTGCAGG
51 CTCAGCGTCT GGGACTCTGG GGTGAAGGCT CAGCCATGCC CTGCAGACAC
101 CATGGGGCAG GGCTCAGACC TGTGCACCTG TCTCTTGCAA ACCACTGTTT
151 TCTCTGTTTT GTAACCCCCC ACCCAACCCC ACATAACACC TCTGGGTTTA
201 AACACATGC ACCCTTGTGC CGGTACCTC CCTGCAGCCG GAGAACCTGC
251 TTCTGGCCAG CAAGTGCAAA GGGGCTGCAG TGAAGCTGGC AGACTTCGGC
301 CTAGCTATCG AGGTGCAGGG GGACCAGCAG GCATGGTTTG GTGAGTGCCA
351 GGGGCAGGGT GTGTTGGCTG GCAGTTGGCA GGGCAGGAGG TGATGCTGAC
401 AGCCCCCTGT GGCCTCTTCC CCTCTCTCTA GGTTCGCTG GCACACCAGG
451 CTACCTGTCC CCTGAGGTCC TTCGCAAAGA GGCGTATGGC AAGCCTGTGG
501 ACATCTGGGC ATGTGGTGAG GCCTGGCCTG AGTTGGTGCG GGGCAGGGCC
551 TCGGGTGTTT CAGGACTTCC CACCTACATC CTGGAGTGTG CAGTGGCCAG
601 CACGTCTTGC TCTCATCTGG GTTTATCTGT GTCAGACCTG CCCTTGAGCT
651 GCCCTGGCAG GGGTCTGCCC ACACAGCCAA GAGCCCCCTT TCCACCCAGA
701 TTAGAATTGC TCACATGAAC CTGGCGCACC CCAGTGCTCG CCTGCGCTCA
751 GCAGAGGTCT GGTCCAGAAG TGTGGTGGGT GGATGGGAGT GGAGAAGAGA
801 GGTCAGGGGC TGTTGGGCCA TGGGCAGGGC CACCTCCTTG GGTAGGGGTC
851 TCCTCCACCA GAGGTGGGGA GCAGCAGAGG GGCTTGACAT CACCCTCATC
901 CCTGTGATAG TGTGGGTGTG GGGCAGAGGT CAGGGGGCCG GCTGTGCCCT
951 TCTACCCAG TGTCTGCTGC ACAGGTGGGG GCAAAGGAAT GCTGAGGACC
1001 CCAATGCCCT CCCAGGGCCA CAGGAGCTAG GCAGTGAGGG TGCAGGGCAT
1051 GGGCTTCATG GACGGTGGCA CCCTGCAAGT GGCTGCGGTG CTCACAGGCC
1101 CCATCCGAG GGGTGATCCT GTACATCCTG CTCGTGGGCT ACCCACCCTT
1151 CTGGGACGAG GACACGACA AGCTGTACCA GCAGATCAAG GCTGGTGCCT
1201 ATGACGTGAG TGCACAGCC CCTCTCTGAT GAGCTCCCTT CCTCCAGGTG
1251 TGGCCGGGTG AGGGCAGCGT GGGAAGAGGC TAGGAGTGGG GTGAAGCCAC
1301 CTGTGGCCAG GTCCTGGGTC CTGCTCTCCC AGATTCTGTG CTGGAGATGA
1351 AGCCCCCTGG AGAATTCTTG CCCCTGCCTG AGAGGGAGCT TCAGGCCCCG
1401 CCGGGGCGCT GTTTCCTTCT GCAGTTCCCG TCCCCTGAGT GGGACACCGT
1451 CACTCCTGAA GCCAAAAACC TCATCAACCA GATGCTGACC ATCAACCCTG
1501 CCAAGCGCAT CACAGCCCAT GAGGCCCTGA AGCACCCTG GGTCTGCGTG
1551 AGTCGCCCTT GGTGCCCATG GTGGGGAGGG GGCTCCTGGT GGAGATGGCC
1601 TCAGACCACT CCCCTGGCAA GGACCCCAAG AGGGTCCTGT TCCTGACATC
1651 CAAGAGCTCC CTTGGGTCCC CTGGGTGCTC CTTGTGGCCT CTGGCTTGGG
1701 ACATACCAGC ACGTTTGTGA GGCCTGGGGC TTGGAAGGCA TTAGAGGGTA
1751 GAGGTGATCC CTTCTCTCCA ACTGCAGTCC TGTCTGTGAG GGGCAGAGTG
1801 GACGAGGCAA GGGAGAGACG AGTCTTGAAG TCCCAGGCGG GTGGGGACAG
1851 ACAACCCCTT CCGCAATGGT GGCCGGTGGC TCTTGGAAG TGGGGACCCC
1901 AGGGTGCCAC AAGCCTTGCC ACCCTGGCCT CTCCCCTGTG CCTCGGGCTC
1951 GGCTGCCATA TGACCACCCA TTTCCCCACA GCAACGCTCC ACGGTAGCAT
2001 CCATGATGCA CAGACAGGAG ACTGTGGAGT GTCTGAAAAA GTTCAATGCC
2051 AGGAGAAAGC TCAAGGTGAG GCCCTGGCCC CTAGTCCCAG GCACGGCCAT
2101 GCTTCTCTGT GTCCCTCTGG GCTGGAGCAG GGGGGCCTTG GGGGGTCTGG
2151 GCAGACCTAG GGGTTACTGC TGCCCCAAG ACTGACTGTT AGCAAGTCCC
2201 AGACTGGATG CATCAGGTGA ACTCAGGCCA GCTTGGGAAT GAGTCCAGAG
2251 GGGCCCTGGG CCAGGTGTGG CTCCTCCTAG TTGTCTGTGC CACCTCCTAG
2301 CAGCCCTTGG AGGAGCTGTC CTGAAGCGCT CGCTGTGGGC TCCTCACCCG
2351 GGCTCTGCAG GCAGCACTCA CCCTCTGGCA GTCACACTGT TTAGTACAAG
2401 CAAGTCCGAA GCTTCCGGCT CAGACAGGTT TGGTAAGGAG AGCAGAGCCA
2451 CACACACTGG TCTTGGGTGG GCTGGGGGAG TTCTGGGAGG GAGGTGGGTC
2501 CCAGTAGGGT ATCCAACCTG CCTGCTTTGG TCAGGGCTGG CTCCGGTGAC
2551 CGCACACTGG CAGTCCCTCT ACTTGTGGGT TCCGGGATGG GGACTTGTG
2601 CCTGACTGCC CTCTGCTGGT CTCTGAGCAG TTCTCCCCGG AAGCCCCAGG
2651 ACTGTTGCCC TGTCTGAGCC TGTGAGGAAA AGAAGGGGCT GTCAGGGAGC
2701 TGGACCCAGG AGGAGCTGCC GTGGTGACCA GCTGTCTGAG TGACCCCTGA
2751 GGCTTGAGGG GTCTTGAAGC AGCTAGAAGC TGTAAGTTGGT CAACAGGTTT
2801 AGGCCCAGGG TGTGTGTAGT TCTGGAAATA GGTGATCTGT CTCAGTGCGG
2851 CTGCTGGCTT CCTGGAGCTC TTGCCTCTCT GGAAGGCTGA GGTGATGTCA
2901 GCCTCATGAC AATGAGGCTG AGCATCTGGG CAGGAGGACA GGGGTCTTAT
2951 CCTGGCCAGA AGCCAGCAGG GAACACTGAT GGGATAGCCC CGGTTTATC
3001 TGTGTCTCTC CCCAGGGAGC CATCCTCACC ACCATGCTGG CCACACGGAA
3051 TTTCTCAGGT GAGCCTTCTT TCTCCAGGGA GACAGGCGCT GCCCCCTCCC

FIGURE 3A

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3101 TGCTGGCCCA CGCAGGAGAG CGCCTCCTTC CTCACCAGCC TCTCCACTCC
3151 TCCTCTGCGG CAGGCCTGCC CTCGGCGTCT GCCCTCAGCT CTGAGACCCA
3201 CTGCCCACCT GGCCCCGCTG GGCTCCCACC TTGGGTGATA CCACAGGGTC
3251 CAGCCCCCGG AGGCCATCAC CTTCTGTGTC GGTCTGTGTC CCTCCACCCC
3301 CTGAACACGA GCGTCTGTGC TGCCCCACTG GGGCTCACAG CATCGTGTGT
3351 GTCTGTCCAG GCGTTTGTGC GGCATCTATG TGGCCTCCTT GTCATTTTGA
3401 GTGCTCTGAA CATTGTGTTT TGTGCGGGAG GTGGGCAGAA GGGATGCGGG
3451 GTGATGCGGG AGGCTCGGGG GCCTCCTTCC AAGTCTTGGA TGAGCTGCAG
3501 CCTCCTGTCC CGGCTGCTCA GGGTGGGTGG TTGGGAAGCA AGTTCTCTTG
3551 GCAGGGGGGT GGGGTCTGTT ATAGACCCCT GAGGCCAGG GCGCTGGCAG
3601 ACCCATCGGG GCATGATGTT AGCCCCGGAG TGGAGCCGGC AGCCCAGGTC
3651 TGGACAAGCT GTACCTGTGG CTTCTCCGTC GTCCGACACT CCGTGTGCGA
3701 GCGTCTGTGA TCCGTCTCTC TCGTTGTCCG TTTGCATCTG GTGCCCCCA
3751 CCCGCCATCC TGTTACTTTT GCTGTGATGC TGTAAATGCC GGAACGCGTG
3801 CACACGGTCA CACCAACACT AATAGGACTG TCCTGTCTGC TGTGTGCTCA
3851 CCACACCCCT TGGGCATGAG AAGCCCCAC TGGGGTTTTT TAAGGAGAAA
3901 GGAGGCAAAT GCTTTTCCGT GTCAATCAGT CCAATCTTGT TTCACTCTC
3951 TTGAGCAAAG GATTCTGGAA CCATCTGTCA CCTAAACTTT AACTCTAATC
4001 TTCTTCTGCT TCCTTTGTCT CTTTCTCTCC CTTACCTCGC CCACCCCTCG
4051 TCTGTGTCCG CCCACCCCTC CTTCCCTC GTCTCTAACC CGGTGCTAAC
4101 AGTGGGCAGA CAGACCACCG CTCCGGCCAC AATGTCCACC GCGGCTCCG
4151 GCACCACCAT GGGGCTGGTG GAACAAGGTA GATGTGTCTC GACCAGCGTC
4201 CCGCCCGCTC CCGCCCGTCC CTCCTGCCAG CATGCAGCCC CCTGCTGCAC
4251 GCAGCCGCTG CCGGGCTCC AGAGCCGCC CAGAGGCCGC CAGGCCCCCG
4301 GGAGCCCCGT CTCCCGTGTG GTCACATCCC AGCAGAGCCC ACCACAAGGG
4351 CAGGGAGGCA GCCCCAAGG CTCCTCGCCT GTAAGAGGAG GGGCTGGGCT
4401 AGGTGGCCCC TGGGCTACAC CAAGCCCTTC TGGTCTTGGC CCCCAGGTC
4451 TGGGGGTCCG GAGACCCCA TTAAGAATGG CCTGGGCCCC ACAGGGAGCC
4501 ACTGGGCCTG CTGCTGGGGG GTCTGAATCC TGAAGGAGA GCCTTGAGGA
4551 GCAGAGCCAG AGAGGCAGAG GCCCTTGGGG CAGACACACA CCCTGCCCTT
4601 CTGGGGCCGC ATGGAGACGG TGGTCTGTGC TGCTGAGTCC TACACATGCA
4651 TGCTGCCCT GAGCATCCCC CCAGGACAAG CCGCTCTGGA GTGGGTGAGG
4701 GTTTTATGCA CCCTGAGGAG ACTTTCAAGG CTTCTCTCTG GGTGTGTTCT
4751 GCAAAGTCTT CCTCCCCTGG CCTCAAACCC TGTGAGGGAA AAGGCCGGCA
4801 CTGGCCACCT GCTCCTCTGG GCTGTGCGGG GCCAGAGCCC AGAGGCCCAA
4851 GTTGGCTTCT GCCCACCTGC TGGCTTGTGA CCATGGGCAG ACCCCATGAG
4901 GGCTAGGCGA CCCCAGACC TCCTTGAGC TCCAGCCTGA GCTGAAGGCT
4951 GGTGAGAGCT TAGGGCAGGC CAAGCTGACA ACGCCTGGCC ACAGAACACA
5001 GAGGGCTACA GGGGTGACCC CAGATCCTCC CTGGGCTGAG CTGCTGAGTT
5051 CCCTGTGCGT GCCTCCAACG TGGGCTGGGG ACCCGGCAGA GGTTCCAGGG
5101 TGCTGGAGAC TGCCCTTCCCC AGGCCTCCTC ATGACCCACA GGGTGAGCAG
5151 CCTGGCCTTC CCAGCCAGAG AACCCTCCTT CTGGGGAGGC CCAGGGCGTC
5201 CTCGGGGAGG GCAGTCTATT CTCTCCCAT GAGCCAGTG GACGTGTCTA
5251 GCAGGCAGCA CCCCAGGAGA GCCCTCCAC GTCTTCTCCA TTTGACAGGC
5301 CTTTCCAGAG CGCAGGCGGG AGGGGCTGT GATTAGAAAA GAGTGAGGCT
5351 AGTGGCTTCT GGGGAGGCAC TGCTGCCAG GGGACAGTGC TGAGAGACAG
5401 CTGCCTCTAC GCTGCCCTGT GCCCGGGCT CCCGCTGCAA TGCCCGCTG
5451 TCTGCAAGTG AACGTGGGGC GACGGTGCAT GAGGCCCTGC ATGTGTGGCT
5501 CCACCCTGGG CGCCGAGAGC AGCTCTGTCC TGGAGGGTGG TCAGTGATG
5551 TGGACAGAGC CCAGCATGGC TGTCTGGGT GACCAGCTAA GGGGACAAGG
5601 CAGAGGCAGG GCTGAGAGGA CCACCCATCC TGCTAGGTCA GCCCAGCTCA
5651 GCCATATCAC ACGGCAGTGA GCATGGAGCT CAGTTCTCTG CCAATGGCAG
5701 CTGAGTCTAG TACCATCCAG TCAGAGTCTG GTACCAGCCC ATGTGGCATA
5751 GCCCCCTCGG CCCGAGAGA GACCCGCTCT GTCGAGTGTG CTTCAGTTTG
5801 GCCTCTGTGG TCTCTCTGCT ATTGATCAGG TGTAAAGGCA TAGGAGACCC
5851 AGTGTCCGGC CAGCTGCAGG GTGGCAGCAG TTGCCCCGGC CTGGAGACCC
5901 GGAATGGGC AGTGCCTTCC CAGGATGGAG GGCAGAGGGT CTCTCCTTGT
5951 CCCACAGAGG CCTGCAGAAC CCCCACCCA GGTGTCTGAG ATGCCTGTGA
6001 CTGCTCCGCC TACCCTGGGC TCCTGCGGCA CCTAACGCAT GCTTTGAACT
6051 TGAGACACAG AAAGGAAGTT CCCGTGCCCT TGAATGCTAG TGATAGATGGG
6101 CATCGACAGG ACTCTGGCCA CGGTGAATCT GGAGTTAGTC CCAGGCAGAG
6151 ATGTGAAATG AGCAGCCCC CAAAAAATGG TTGGCCGGGA GCCATGCACT

FIGURE 3B



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

6201 CAGGAGGGCC GGGCCCATGC ACCCCACACT GCGCCCAAGG CGTGCACAAG
6251 CGATTGTTTT AAAAGCGGGT TCACAAGGAA GGATGTTTGG GAACTGACTG
6301 AGACAACAGG GACGTCTGCT GCAGGGCTTC CCAGAGCTCT GATGGCAGCG
6351 TCGGCCTGAG TCCTTCGAGG AGGGCTGGTT TGTACGTGGC ATTTGCTGCC
6401 CACTGGACTG TGAACCTCTG TCTTTTATT TCCCACTGCT GCTGTGGTAC
6451 ATCTCCAGTA GCATAGTTTG GAAATGCAGG TTTTGATAGA CTCAAGGATC
6501 TAAATAGAAC CCTCTTAGTA CCAAGGACTG TCCGGGGTCT CTGCCAGCCC
6551 CGCCGATGGG CCTAAGTGTG GTGCCTCCTT TCCTGTGAGA ATCTTCTGAG
6601 GACATGCCCG GGGAAAGAGC TCAGTTCTGC TGCTGCCTAG GGTGCCATGC
6651 TGGCCCCGGT TCCAATGCAG AGCCTAGCTG GAAGTACCGC TGGGTTGGCG
6701 GAGGCTACGT GCCTGACTGT CCCCTCGGGG GTGGGGTGGG ACTAGCCTTC
6751 TGAAACCGCC TGCTTCAGTT GGCCACAGCT TTTTGAAATG TGTGTTTCTG
6801 GAAGGGACTG GGTCCCTTCC TTGCCTGTTC AGCTCCCCAC GACAAATGTC
6851 CTCAAGGCGA GGCTGGATGC TTCCTTCCTC AGGCTCCTAG GAGGAGCCCCG
6901 TCCCCCAGCT GTGTCGGGCA GCTGGTCACC AGCAAGGACA GGATCCCTCA
6951 GCTGCAGCCT CAGGCTGGCT GGCACCTGGC GGGTGTTCCT GGGATGAGTT
7001 GTGTGTACTG GAGATGGGAG GGGAGCTGAG AGGGTGGGAT GCACAGACAG
7051 GAGAGGGGAC TGTGGGGTCT CTGGAACCCT GAGTTCCAAG TCTTCAGGAC
7101 TCTCCCTCCA TAGCAAGTTA CAGGGAAGCA GATTTGAGCC ACAGGGAAGC
7151 AGATTTGAGC TGCAGCGAGG GGGAGGGTTT TCAGTCTGTG CTATAGGGAA
7201 GTGGGCAGTC GGCATTTCTG GTCCTGGGAA CTCACCTGGC AGGGCTGCCT
7251 TGGGACATCA GGGAGGTGGC GCTGTGTCTA GCTTCACCAG GAGGGGCCTT
7301 AGGCCTGGGG ACGGAGAGTG ATGCCTGAGG CCCCTCTACT TCTCCATGGA
7351 TCCTGGGAGG GACTCCTGGG CTGGATACAA AATTGTTGAG AGTTAAGAGA
7401 TCTGTGAGGA AGGGGAGGCT GGGAAATAGAA AGTGTGTGCC CACTGCACAT
7451 GGGGTCCGCA GGGCCACGTG CAGCCACTGC GCAGGCACAA CCCCAGTCCC
7501 CACAGAGCCC AGGAGGGGCC AGAGCCATGG AGGAGGCAGC ACTGGGCATT
7551 TGGACAGGGA GGGGGTGGTC AGCAGGCAGC AGGCCCAGGC CTGTCTATGC
7601 CCTGCGGGGT GCAGCCTCCT GATCTCCACG GCAACCTGGA GCACCCAGCG
7651 TCAGAACCAC CGGGAGGGCT TATGGAACAG ATGTCCAGCC CTGCAGAAGT
7701 TCTGGCTCAG GAGGGCGGGG TGGGCCTGGG AATTGTGCATT TCTGACTGTA
7751 CAGGGCGATT CTGCTGCTGC TGCTGCTGCT GGGGTGGGG GAGGATCCCA
7801 TTTGAGAAGC GCTGCAGTCC TAGGTTGAAA CGTGCCTGTC TGTCCCCACC
7851 CAGGCCTGCA TGGGCAGCAC GGGATCCCCA GGCAGGAGGA CCCAATTTC
7901 TGGCCTGGCC AGCCAGGGTC CTGGAGCCAG GCGGTGGGG AGGGATGGGG
7951 GATTGCTGTG CCACCTTCCT TCCCGGCTTG GCCCGGGGGC AAGCATCCTC
8001 ACACCTCCCA TGTGTCATC CCCTTGGCTC CAGCCTGGCT GCCTCTCTAA
8051 CCCTGCTGTA CCGCTGGCC GCATGGCCCT GGCTCTTTT GGTGAGCGTG
8101 GTCCAGGACT GGTGACCTGT GAGTCCTGGG CCCGCAGTCT TGCGCCCCTG
8151 CCCGAACCAA CACAAATCTT GTTTCTCTC TCTCTCTTCC TTCCTCACTC
8201 CCTCCCTTTC TCACCTTTTC TTTTCTGTAA GGTAAGCTGA CTTCTCTTTT
8251 TGGTTTTTTA TTTATTTTAA TTTTCTAGTT CTGTAATTAA AATCCTAACA
8301 GCCATGGAGG GTGTGGGCAC CGGGGGCTGG GGCCAGGCC CTCTGACCTC
8351 TGAGGGGGAA TGCTGGGTGA GGCAGGGGCC CCGCTGCTGG GACCAAGTAT
8401 CCTCAGGGGC TTGTGGGCAG AAAGGCCTGT GCTGGCCCCA GTCAGTGCAC
8451 AGAAGCGGCC CCAAGGCCAG GGCTGCTGGG CAGCTCGGAA TGAGGGCGAG
8501 CAGGGCTGCC CTTGGTGCTT GAGCCAAGGA GCCAATGGGA CAGACCTCTG
8551 AGCCTGGGTG CCAAGTATGA GGTCTGAGAC AGGGTGAGCG CCTGGGCTGG
8601 GACAAGGCC TCTGAGTGGG CGGCCAGCTG CAGCCCCACC ACCCTACCC
8651 CAGGAAGGCA GGGCCCGGGA GGGCATGACC TCTGGGGTGC TGGCTCAGCT
8701 GCCCCCACC CAACCTGACA CCGCTAGTCC TGAGTTCCCA TCAGGGAGGA
8751 AGCAGCATCC TGCTTCCTC TAGGAAGAGC TTGCATGTGG CCCAGAAGCC
8801 AAGGGGGCTC CCCAGACCC ACGGCATCT CTGGGTCTGG TCAGAGGAGA
8851 AATCTGGATG CTTGCAGGAG CCCCAGGGTC ATGGAGGAGG CTGGAGACAG
8901 GGCTGTCTTG GGGTGATGGG ATGGCCCCC CACCTGCTCA GAGCCAGCCT
8951 GGGTGCTGGA ACCACACTG CCTCAGGACC CTGGGCTTGC TCCTGGGGAA
9001 AGAGTGGGGT CAGGCAAAGG GGTGGGGTTG CGCTGCAGCG AGACCCAGGC
9051 CCATCACTCA CCATACCTTC TTCCTCCCCA TGCAGCAGCC AAGAGTTTAC
9101 TCAACAAGAA AGCAGATGGA GTCAAGGTGA GGCTCCAGCC GGGCCCTGTG
9151 GTGCCGGGGA GCCCAGAGCC TGCAGCTTCA CCCCCACGCC CTGGGGCTCC
9201 TGCTCTGGAG TCCCCCTCCC CCCATGCCCT GAGAGACACG GGACAGGGAA
9251 TGGCGAGTGA GGGGCTTCTC CCACCTAAGA GTTCTCTTCC CCTCTCTCCA

FIGURE 3C

OIPE
MAR 24 2003
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Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

9301 CAGCCCCAGA CGAATAGCAC CAAAAACAGT GCAGCCGCCA CCAGCCCCAA
9351 AGGGACGCTT CCTCCTGCCG CCCTGGTACT GAGCTCCTCA AATTCTGCCT
9401 CTCAGCCCCT CCTACGCCCC TGGCTGTGTG ATTGCCGCTG GTCAGAGGGG
9451 GCCGGGTGAA GGTGGGGTCT GGGCCGCTT GGCCTGTCTG ACAGCACTCG
9501 CATGGCCCCC GCCCCTCATC CCTCACCGGT GGTGAAGTGG AGAGAAGAGG
9551 CCACTGTTGT GGGGGGCTCC AATTCAGACA GGTTTAGGAC TGCTCTGGGG
9601 AGCCCCCTGGC TGAGACCCAC AGATGTTGGG GTGCAGGGGA GAGGCCCCAGC
9651 CTCCCACCCA TGTTGACTTG TGGATGTCTC TCCAGGAGTG TTCAGGAAGT
9701 CAGTGAGGCA GAAGATACCC TCTCCCCACC AGGACCCAC CCTCAGCTCC
9751 TCCACCATCC TCAACAGGCC GACCCACAGA CCACTCCGAA GGTCTGGCTT
9801 GGTGGGGCTG GGCAGGATC TGCAGGGGA ACAGCCATA GTGGCACATT
9851 CCACGGCCCA TGGGGAGACG GGGCCACGGT GGTGCAGTAG AGAGGTGTCT
9901 AAGCCAGTGG CAGCCAAGGG GAGGGCTGCG CGTCACCTCT GTGTTCCCTC
9951 AGTGCTGCTC TGTGGCTGCC TGAGAGGCAG GGCTTAGGGG CTCCCTGCCG
10001 GGGAGGGGAG GGGTCCCCAC CATGCTCCGC TCCAACGCG CCCCTCAGTG
10051 CCCCTTGCCC TGGGGGCTCC TACAGGTGAA CCCTATAGCA GTACTCCAA
10101 GGATGTAAAG TTGTGGCTGG TGGGTGCCGG CTTCTCTGCT GGGGCGCTGT
10151 GCTGTGTCCC CTCAGCTGTC CTAAGAGCTT TGGGGCTTGC TGGCCCGTAG
10201 GTCCCATAT TTGCTGGAAG CAGGCTTGGT GTCCCTGAG AACCCAGGC
10251 CAGGCTTCGG GAGCCAGCCC CAGACCGCCC ACGGGAATAC TGGGTTTGCC
10301 AAATGGCCAC CTTGAGACCC AGGAGAGGAG AGCGGTCCTG GGAGGGGCGA
10351 GCTGCTCAGA GCAGCCAGGC CGTGGCTGGA GGGTGGCTG GTGCAGCCTA
10401 CCTAGGGCCT TCCAGTGGCC AGGGCAGCCC ACGTGCCAGC CTCACAGCCA
10451 GCCCCATCTC GGACCCTGTC CATCCCATGT GCCACCGCCA CCCCATGAC
10501 ATCTTCAAACTGTGCCCCC CACCACGCTG GGGCACAGGT TCAGGCAGTA
10551 AAGGGTAGGG AGAACCCTC AAGACCGAGC CTGGCTTCTC TGGCTCCCAC
10601 ACACATTGTG CAGCTTGTG GGGCCCCACA CGGTCCATCT CCCACCCTGG
10651 ACAGCAGCAC CTCGCGCAGC CTGGACAGAG CTCCTGTCCA TTCCATCCCT
10701 GCCGGCTGAC CCAGGCTCCT CCCCAGCTG CTCCACGCG CCTCCATCCC
10751 TGTCCCCCAC TCTGCTCTGC ACTTCTTTCT CGCAGGCTCT GGCCACCCAC
10801 ACCTCCTCTG TCTCCCTGTT CCCCTCCTGG TGGTCTCCGC TTCCTCCTCT
10851 TCTCACTTTC CCTCTCTTTC CTCTCTCTGT GTCTTCTCTC TTCTGTAGGA
10901 GCCTCAAACC ACCGTCATCC ATAACCCAGT GGACGGGATT AAGGTACTGC
10951 CCCACTTTCC TCCTCCCGCT TTCCCCAGGC AGGAGGCTCC AGGCCAGGAG
11001 AGAGGTCTGG GGCAGCATTT GTGCCAGAGT GGAGGGCAGA TGTCCCATGG
11051 CCCTGGCCGC CCCTCCCCGC AGTACGGTAG GGCCCCAGTC CGTCTCTGTC
11101 GGCAACAACA GGACAGACTG GCTCAGGCCC CAGGCGCGCC CCTGGAGGTG
11151 CTTGGCACAG TTGCGCCCGG TCCCCATGTG GCGGACATC TCAGACCAGG
11201 GCTCTGCGTG TCCCACCTAC GGCAGGCAGT AGGGCTTCTC GAGGTCTGGA
11251 GCAGGGCCTG CATCTCAGGA GCTGCATCCT TGGCCCTCCT GGCTGTCTCT
11301 CACCCACCT CCCTCAGTG GCCCCAGTG CTTCTGCTG AGCAGACCTT
11351 CCCTCCTCTG CTCCCCCTC TGCTCTGGCC ATCAGCTCCC ATCACATTGG
11401 CATCATCACT CTGGGGCCAG GGAAGGGGCT GGCTCTCTGG GGTGGTGGGA
11451 GGGATGGGGC CAGCAGCAA GCCATTTCGA GGACTTCAA AACAGCGCCA
11501 CTACACCCAA CACGGCCCTC CAGCCAGCT CCCACCTAGG CCTGGGCTCC
11551 TTACAGAGCC CCCAGAGTGC CTCTGTGGGG ACCCCCCACT TCCTTCTGGC
11601 CAGTGCCACC ACCCAGCCCA TCATCAGAAG ACATCTTTCT CCATGGCAGG
11651 GACCAGGGGG TCCAAGGGG ACCCATGGTG CTAGGCACCA GGGCCTGGGC
11701 ATTCTTCCCA TCTGGCAGCT GGGGATGGGT GCCCTGGGA CCGTGTGTG
11751 TCTGGGGTGG GTCATGCTCT CTGCAGGACT CCTAAACAAC CTTCTGGGCT
11801 GTGGTGAAC CTGAGCCTGC ACCTAAAAGA CCTGTAGTTC TGGTCTAGGG
11851 CCTCAAGCA GTGTCCAGGC AGTGTCCAGA CCAGGGGGCG GTCCCCCAGG
11901 GACCTTGTA GATGTTTCT CTGAGGAGCA GAGCAGGCCT CCTGGGGACC
11951 TGGGGGATGG TCTTTTGAAG GGCAGCAGCC CTGGAGCAGG GTGGGAGAGT
12001 CTGGGGCCAC CTCTGCCCTC TAAGGCCACC TGAGAGGTGA GGCCGGGGCC
12051 TGA CTGGACG TCCAGTCCCA GAGGGGCAGG TGCCCTGAGG GAATGTGGGC
12101 GACAGGAATG CTCTGCCTGG GGCCAGGCCA AGGTTCTCTG AGCCCTGTGC
12151 GGATCTGCAG AGCTCCTGGG AACGCCTCAC CCTGTATTTT GGATGACACC
12201 GGCTGCTGCT TCATTGGAAC CAGCCAGTCC CATTGTGTTT TACGTCTTGG
12251 AATTTCAAAA AGCCCATTTT CCTCTCTTGT TAAAGAGTCA GCTGAGCATA
12301 CCAGTCTCTC TGCCAGGCTC ATCTTGCTGG GAGAAGTGA GCCCTCATGT
12351 GTTGGGGATG CAGGGTGGCC ACAGCACTAG GGTGGCAGGG CCGGCCTCGG

FIGURE 3D

12401 ACTCCGTGCC AGCCTGTGCT GGCTGCCGTG AGAATGCACC CTGGTGAGGG
12451 GCGCCCTCCC AGGGACCAGC ACAGAACTGG GTGTCTTCTC CGGTCACTGC
12501 CGCATGAGGT CCACAGAGCT GGGGCCCTGC AGCCGCCAGA GGGCATGTCC
12551 CCTGAGCCCC TGGCCTTTAA GCCCGTGGA AGCAGCCGAG GCAGAGATCA
12601 GCTTCAGAGC CTGGGTGGT CTTGACACAG GCCCAGCCCT GTCCACCTGC
12651 CCTCAGCCAC GTCCACCTA TCCTTGCCG CATCCTGACC CGCTGCCTCC
12701 CGTGTTCCTT CAGGAGTCTT CTGACAGTGC CAATACCACC ATAGAGGATG
12751 AAGACGCTAA AGGTACCTGC ACTTGAGTCC TTGCCCCCCC AGCGGCCCTG
12801 GCATTGCTGG GTTGCTCTTT GAGGTGGGTG GGACTTGGG AGGGTCAACT
12851 CTCCTGCGAC GCCTAGTTTA TGCATGTGTT GAGGGGCTCA GGGACCCTGT
12901 AGCTGTAATC CTGCTCCAAG CCTGGGTGTC AGGCCTGCCC AGAGCGGAGA
12951 AGCATGGCAG AGATGACCGA CAGCTGGGCA GTCTCGGTCA CCGCATCCAA
13001 GTGAGGAAGC CACGGCTTTG CATGGAGGCA GGTTCCTCCAC ACCAGGACCC
13051 TCACGGGGAA ACAGGCCCAT GGGTAGAATT TGTTCACAGA TGCTGTCTTT
13101 GTCTTAAAGC TCCTTAAAGT TGCGTTTCTG TCCAGCATGC ACTTGCCAAG
13151 TGGCCGGGCA GCTGGGTGAG TGTTTCCGTG TTTGCTTTG CTTAGCCAGG
13201 AGTGTCCCTG CCGGTGGGT TTCTGCACCA CAGATTCCAG GGCCCCCTCC
13251 CTTGCTCACC CAGGCCAATG TCTTGTGTGT TCCCAAGAG GCCCCCAGGG
13301 CACCAGGCAC TGGGGCATGC TCCATGGATT CTGCCGCCCTC CAGACCACCC
13351 ACATGGGGCC TCCTGACCCT CATCGCTCAC ACGGTCACCT AATAAGCCTT
13401 ATGCTGTTCT CAGGGCTACC CTGGTGCCCA AAAAGGGTCA GCCACTCTGC
13451 CAGTTTAGGG GAGAAAACCT CTCACCTGTC CAAAGCATAG CCTTGCTCCT
13501 GCCCGGCCTA CCAAGCTATG ACACTGTCCC TGAGCAGAGA TGAGCACAGG
13551 ACTTTGGGCC CTGGATGCCG GAGAGTGGGT GTTTGTGTGA TTCCCTGCA
13601 GTCTGGAACA GGCCCCAAAG GCAACAGCAT GAAGGCTGTC CAGAGGTTCT
13651 CCATCACCCT CAGCCGAGTG GGGTGCTGAG CAGTGAGGGA GGGGACCTGG
13701 GAGGGGGGCC CAGCCTGGAT CCTGCAGGGG AGAAGAGAAG ACAGCCAGAA
13751 GCCAGCAGCT GTGGCTCAGA TCTGAGCCCG AGCAGCCTCT CGAGGTGGAG
13801 GCAGACACCC CCCACCCAC CCCGTGCAGA AAGAAGCCTT GCCAGCCTGC
13851 CCTGAGGCTG GTACAGAGTC CAGGCAGGCT CAGTGCCCAT CATGCCCTA
13901 CGATGACTGT CACTCCCTCT CCGTGCGCCT GGCCTCTGCT GGCTCTGGCC
13951 AGGGGTGGTC ACAGCACTAG GGTGGCAGGG TGGCCTCTGA CTCTGCGCCA
14001 GCCTGCACTG GCCTGTGCTG CCCTGGCCTC TGCTGGCTCT GGCTCTGGCA
14051 CCGGTCCCGT GTTGGCTCCT TCAGCCTTCA CATACTGCT GCGGCCACCA
14101 CAGGCCCAGG ACCCCACAG GGTGGCCACC CCACCTCCAC CCCAGGAGCC
14151 CCAGGTATCC AGCTGTCACC CCCTCCCTCC CTCCTGGCCT CCCCCTGTCC
14201 TTCTCCAGTT GCCTTCTTTT CCTGCGGGCG CACCACCCAC CTGCCTGCCT
14251 CACCTGTTCG GCCTCAGCCC CCAGGGTCCC CGACATCCTG AGCTCAGTGA
14301 GGAGGGGCTC GGGAGCCCCA GAAGCCGAGG GGCCCCTGCC CTGCCCATCT
14351 CCGGCTCCCT TTAGCCCCCT GCCAGCCCCA TGTAAGTAG CTGGGTCTCTG
14401 CTGCTGTGGG GGTCATGTTG GAGGGCTGGC AACCCCTAG AGGGGCCACT
14451 CCAGAGCCGA GGGCAGGCTG AGCGTGACCT CTGGCTCCAG CCTCATCACC
14501 CCACAATCCC TCACTGGGGC TTTCCAGGGT GGCCCCAGCC CATCGAGCCC
14551 CACCTCTTTG TGAGGAGGGC CCTTGACCAC TTCTCTGCTC AAGGCCACTG
14601 GGCAGGATGG GAGGCCCTGG AGGCTCGGGC CTCAATTCCA GTCTTCAGGG
14651 TCGGTGCAGG CCTCACTCCA CCTCAGCTTG CCGGCGGGGG GGCTCCCTGC
14701 TATTGAGGCA GGCTCTGATT CAGGGCTGTA TCCAGGGGCC CAAGGGGTCT
14751 AGAACACGGG ACCCCTCCCA CTGGCCTCCT CCGCCTTGCC GCCGCCTCGT
14801 GTGTCTGTCT GCCTCATGTT CACGTCTCAT CTGTTCACC CCAGCCCCCA
14851 GGGATCTCTG ACATCCTGAA CTCTGTGAGA AGGGGTTCAG GAACCCAGAA
14901 AGCCGAGGGC CCCCTCTCAG CCGGGCCCCC GCCCTGCCTG TCTCCGGCTC
14951 TCCTAGGCCC CCTGTCTCCT CCGTGTAAGT AGTGCCCCC AGGCCTGCCG
15001 CCTCTGCTGC CGGACAGCTC CCTGCGAATG GCCGCGGCTC AGCAGCTTCC
15051 CACCTGCATG CACGGCCAG CTACCCTGCC CCGGCGCCGC AGCCTGGAGT
15101 CCTGCCCTGG CGGGGCTTCC TGTGGGCTCC CATGCTAACC AGCAGGGCAG
15151 CTCTGGCTT CTCCCTAAGG GGCCAGACC CCTCCACGGC TCCTGCTCCC
15201 ACTGCCACTC CCCGCTCGCT GTCCAGCCCC AGGCCCTCT CCAAAATGTC
15251 TGTCACAGCC CTGGGCAGCC CTGGCCCTC CGAGGCCCCC CATGCCCTTA
15301 GGCCCTCTCT GTGATCACT GTCCAGCCC CACAGACTTC ACACCCACCC
15351 AGGGGCCCTG CCCATGGTGC CCAGGAGCTG CACTCAGGGC CACCCTGGTT
15401 CCTGATGTGG CCCCAACCCC TGAGCACCTT CCCTCAGTCT AGGAGGCTGA
15451 GGAAGGTGCC AAAACTGGAA CCCCAGCCAG GGTCTCTGGA GCTCACCAAC

FIGURE 3E

OIP E JC17
MAR 24 2003
PATENT

Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

15501 AAGGGGATAG TACGGAGAAT CATAAGCCTG GCCTCTGCTG ACCTGGGCTG
15551 TCCTCATGGG GCCAGGCCAG GCCTCCTCTG TAACGCCCGT GACTCCCTCC
15601 TCTCCCTGTA ACCCCGTCCA GCGTTCCTCA AGGGCCACTT ACCTGACAGC
15651 TTCTTGCTGG CCAGCAGCCT CTCCTGGAG GGTGCCCTCT GCCCCAGCA
15701 GCTTCAGCCC ACGCCACCCG ACAGCCAGAG CATCTGCCCT TCACTCTGTC
15751 AGCCTCCTCT CCACGCACCA CGCTGTCCGC AGCAGCACCC TCTGTCCCCC
15801 TGTCTCCCTC CGTCCCCCA TATCCCCCTC GGTACGCCCTA CAACCTCTCC
15851 ACGTCCCCCT AAGTCCACGC TCTATCCCTA CATCCCCCTC TGTCCCCCA
15901 ATTCCCCCTT TCCCTCATT TCCATTTTCC TCCCCAACT CTGCTCTGCC
15951 CCTCACATTC TCCCTCTGTC CCCCACACC TCCTCTGTCC CCCACACCT
16001 CCTGTGTCCC CCACACCCTC CTCTGTCCCC CATATACCCC TCTGTCCCCC
16051 ACACCCACCT TGGTCCCTTG CACGCCCTTT TCTGTCCCCC ACACCCCTC
16101 TGTTCCTTAC ACTCTCCCTC TGTCTCCAG ACCCTCCTCT GTCCCCACA
16151 CTCCCTCTGT CCCCACACC CCCTGTCCCC CACACTCTCC CTCTGCCCCC
16201 CAGACCCTCC TCTGTCCCTC AACTCCCTC TGTCCCCAT ATCCCCCTT
16251 GTCCCCACA CCCTCCTCTG TCCTCCACC CCTGCCCCC ATACCCCCCTT
16301 CTGTCCCCCA CACTTCTCTG GTCTTCCACA CCCCCTCTG TCCCCACAC
16351 CCCCTCTGTC CCCCAGACTC TCCCTCTGTC CCCCACACTC CGTCTGTCCC
16401 CCACACCTCC TGTCTTCCAC ACCCCCTTCT GTCCCCACA CCCCCTCTGT
16451 CCCCATACT CTCCTCTGTC CCCCACCTCC CCTCTGTTCC CCACACCGCT
16501 TCTGTCCCCC ACACCCCTC TGTCTTCCAC TTCCCTCTG TCCCCACAT
16551 CCCCCTCTGT CCCCCTGACC CTCCTCTGTC CCCTGCACC TCCTCTGTCC
16601 CATGCACCTC TCTCTGTCCC CCACATCCCC CTCTGTCTC CACACTCCCT
16651 CTGTCCCCCA CATCCACCTT GGTCCCCCTA CGCACCCCCA TCCCCATGA
16701 CCCCTTCTGT CCCCACACC CCCTCTGTCT TCCACACCCC CCTCTGTCCC
16751 CCACACCCAC CTGGGTCCCC TCATGCCCCC CATCCCTTAC ACCCCACTT
16801 TGTCCCCCA CATGCCCTC TGTCCCCAC GTTCCCTTCT GTCTCCACG
16851 TCTCTCCAT TTCCCGTTTC CCTCTCTGTC CCCCAGCTC CCCTCCATCC
16901 CCCACATCCC CTCTTTTCCC CTATATCCCC TCTGTGCGCC CAGGTCCACC
16951 ATCTTCCCCC CACACCCCCC CATTCTCCCT TCCTCCCTC TGTCCCTTG
17001 TGCCCCATCC CCCACATCTG CCTCTGTGCC CCTCAATCTC TGGCTTGGCT
17051 GTCTGCCCAT GGTTCCTCTC CTGCGTGCCC CCGTGCCTG CTTGTGTTC
17101 ACGTCTCGTC TGTTCGCCCC CAGCCCCAG GATCTCTGAC ATCTGAAC
17151 CTGTGAGGAG GGGCTCAGGG ACCCCAGAAG CCGAGGGCCC CTCGCCAGTG
17201 GGGCCCCCGC CCTGCCCATC TCCGACTATC CCTGGCCCC TGCCCCCCCC
17251 ATGTAAGTAG CACCTTGAGT GGCCGTGGCA GCGGCTGCCT GGAGGGGCTC
17301 GGGGCGTGCG AGCCTGGCAG TGGTGCTCTG GGAAGGGCCA TTCTTGCGGA
17351 GGAGGGCGGG GCACAGGATC CCTCTGCTGG GTCCCAGGGA ATTGCTTTGA
17401 AGCACATGAA GGTGCCACTG GGTCTCAGAA AATGGAGGTT ATGGTTATGA
17451 AGTGTGTATG ACATATGTGT ATAGGAAGAG CGTCCGAAAG AGCAGGTTG
17501 TTGCCGACCC CAGCATTCGC AACCCTGAGG TCCACAGCTT TCTCCTGATG
17551 GGAGGGGAAT GGGTGGCAA GGTCTGCGC GTGTGGCAAG GGCTAGCACG
17601 CCAGGAGCTG CTGGCTTGGG TCAAGGTGGA CCTGCTGGGC CGGGACAGAA
17651 AAGTGTCACT CCCGGCCTGA GACGCTCTAG CATTAGAGCT GTCCAAGTCC
17701 AGACAGCAGG GAGCAGGTGG GGATCGGGAG GCGCGGATCT GGGGGGCAGC
17751 TGGGGCCAGG CTGAAACAGA GCGGGCGGGA CAGGAAGCAC AGGCTGGGCA
17801 GCCTCCCCCG CCAGGGAGGA GCCAGGCTGG GCCACCTCCC GGTCTGTCTG
17851 CCGACTACCC GCAGTATCAC TTACAGGGAT GGATGACATC CCAGGGCTGC
17901 TGCCACCCCC ACCTGTGGGG AGACACCAGA CTGGGGGTGG TGTGGAGATA
17951 CTCTTAGAGA AGAGGCTGCT GGGCCACGGG CTCGGCATGG CAGGGCAGTG
18001 GCTAGGTAAG TACTTGAGGG ACAGGTGGGG TCTGCTTGCC ACCGTCCCCT
18051 CTGCAGGCTG GGCCTGGGGG CTGCTGCAGG CGGCCAGGGC AGAAGGGTGT
18101 GGGGAGAGTG AACCCACAGG AGCAGCGGCT CGAGGAGGGG GATGCAGGCT
18151 GCAGGCTCAA AGGGGCACTG GATCCACCCT GGGTGCCCGA GAGAGCAGGG
18201 GGCAGCCCTT GGAGGGGTAC TCACCCCCAG AGCTTCTGTG GTCGGCTGAG
18251 GACCCCGAGC AGGGGTTGAC TGAGGGGATC AGAGGCAAGC AGCTGAGGGG
18301 AGAGGCCAGG TTCTTGATGC TGATAGGGTC GGGGTGCCTG GGCAGCCAGA
18351 ACTCAAGGAG GGAGGCATGG GGAGGGGCCG CCGTGCAGCT GGGGTGGGTG
18401 CACCGCAGAG CCTCTGGGAG TGGTCAGAAC CCCCACACC TGCCACTTCT
18451 ACAGCAGCTC ATCTGATTTT AAGGGGCTTG CTGCCCTTGC AGAAGTGGAG
18501 GGGTGTGCCC AAAGGAGCCT GCCTGGAAGG TCACCCCATC AGGTTGGCAT
18551 GACCCAGCC CAGGACTGCA GCCTGCCCTC AAGGTCTGTG CAGTATCTGG

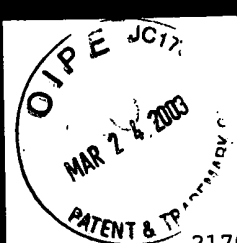
FIGURE 3F

OIP E JC17
MAR 24 2003
PATENT & TRADEMARK

Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

18601 GGTGAGTCCT CTGAGGACAG GGCCAGGGT GGGTGTGGAG TGGCCAGCTC
18651 GGGGCTCGGT GTCCAGGCTC ACCTTCAGGG GCCACAGCAC AGACCTGCCC
18701 TTCCAGAGTC TTCCCTGAGC TTGGCTGGGG AGGAGGGGGC TGCAGGAAGG
18751 AGCTGTGAGC AGGGCAGGAT GGAGATTCGT GTGGCCCTCC TGGGAGGGGC
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18951 GCTGTGTAAA TAGGGCAGGT GCCCAGGCC CGCCTCAGGC CCCGTCTCCT
19001 CCCACCCAC GCTCTCTAAT CGCGGATTAT ACACAATCCA GCCTGATCCC
19051 TGGGCAGCTG CCTTCCCTCC CGCAGCCACC TCTGGCTCTG AGAGATGGGC
19101 TTGGGGCCAG CCTGGGGTCC CAGGAGTCCA GGCCAGGATG AGAACCTGCT
19151 CTGACCCAC CTGGACGCAT TAGGCCTGCC TGGACCTGTT GCCTCACCCC
19201 AAGAGAGCCA CAGGCAATGC AAAGGCTCCT GTTCATGTCA GGGCACCTGG
19251 AAGGCCTGAC TTGCAGAGGC TCTTGGCTCG TGCAGACCCC TCCAAGCCCA
19301 GGCCCTGCCC ACCACCTCCC CTTTGTCTCT GGAAGTCCA GGACAGCTTG
19351 TCCTCAGCCA GCAGGTTTCC CGACCCGGGC ACCTCTTCAT GTTGGGCCCC
19401 CCTCCTTTCC CTCCATCAGG GATCATGCCC TTCTTCAGGG GCCTGGATAT
19451 CAAGGACACA AAAGCTCCCA TGTGCTATGT GGGGAGGCAG AGTGGGGGCT
19501 GGGTTGAGCT GGGGTCTGGG CAGCGCCATT CCGCAGGGCA GGGGCAGCCT
19551 AGGCTTCCCA TCTGTGGAAT GGGTGGGTGG GTCTCACAAC GGACCTGCTT
19601 CCCGTAATTC AGCACGGTTA CCACTCTTGA TTGGAAGTCT GACCATGCAT
19651 CTCCTCTTCT GTTTACTTCA CGCTTTCTCT TCCCATCAAC TCCCATTTTA
19701 ATTACAATTT GTTTAAAAGC ACTGCATATT ACTTCATTAA ACAGAAGATT
19751 AGTTTCACTT ACCATTAGTG TAAGGTGACT ATAGAACCAA AGCAGACTGG
19801 AAACCAAATG ACATAATGTC ATTCTCTTCT CCATTCCAGC TGCCTGCTGC
19851 TGTGCGCCTG AGAACCCCTG TGGAGTGGGA GGGGCAGCTG TCTCTGTACA
19901 TTAGAAAGGG AGGTTAACTA AGTGACAGGA GGTGTTTGGG ACATGTGGAC
19951 ACCAGACTTC TCTCTTGATG CAAGGAGGGC AGAGCCAGGC AGCCTAGTGG
20001 GGGCTGGCTT GGGGGCTGCT GGAAGGACTG GCTACAGGTG GAAGAGAGGT
20051 CAGACCTGAA GCTTGGGGCC ACCTCCAGGA AAGGACAGGT GAAAGTGGAG
20101 GCATGAGGCA GGGGAGAGGC AGGTGCCAGG CAGAGGGTGG AGAGGAGGCA
20151 GGAACATAGC AGCTGGGGCG GGGGCGGGCC CTCAAGTGTC ATATGCTACT
20201 TTCCTGGGGC CCAGGGGCAA GGACAGGAAC AGCCACAGCA TGTGTTGGGA
20251 CAGAGCCCTG TGCCTTCCTA GAGCTGGGCA GGTGGAATGG GGCAGGAATG
20301 GGAAGCTGAG TGGCTGCAGC AGGAACTGGA GGGGAAGGGG CTTCTGGATC
20351 CTGCAGCCTA CCTTCCTAGA GGCCAGCTTT CCGGGGTCCA CCAGGTGGGT
20401 GGGAACTGGG CTTGTGTAGC AAGACTGCCC TGAGGACCAT CCATGACATG
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20501 CAGCTGGGTC AGGAGCAAGG GCCTTTCCAG ATAGGGACAA CCCAAGAGTG
20551 CACATGTGCC CACGCCACAC AACACAGGCA CACACGACAC GTGCACGCTC
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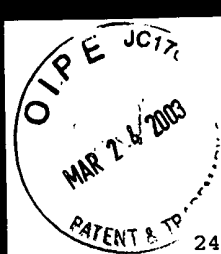
FIGURE 3G



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

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21751 GGACAGTAGT TCTGCCTGAG GAGAGTGAAT GCGGCAAGAT TGAGGAGAAC
21801 ACAGGCATCT TCAAACATA TGTGCGGTGC TTTATTTCTT TAAAAATGCG
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22001 GCCAGTGAGG ACCAGCATGG CTGGGTGGCC TGTGGAATC CAAGGGGGGC
22051 GGGCAGGAGC TGCAGGCAGG CGCCCCGGAG TAGCCCCGGC ATGGGGGTGC
22101 GGGGCAACAG GGATGTCTGC AGGGGTAGCA TGTGGGCCCC GGACTGCAAG
22151 CAGGTGGAGC CAGCCGGATG CGGCTCCTAT GAGAAAAGCG GGGAAACAAGA
22201 GACCACGCTC GTTCTTCCTG CTGCGGGGAC AGCCCTGGTC ATCGCTCCGG
22251 GGAACCCCTG AGCCTGCGCC GCACGTGGCC GCCCCCTGCT GCTTCTCCT
22301 CCCC GGCCCTC CGGGTGGCCT TGCTGACGGC TCCTTCTCTG AGGCAGGTCT
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22951 CCTGGGGCT GGGGGGGGGC TGTGCAGGAC AAGGATGTGG GACCCTTGGG
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24551 CCAAGCTCC ACGTGTGTCC GTCTGTGCTC CTGGCCTCTG GGGGACCAGC
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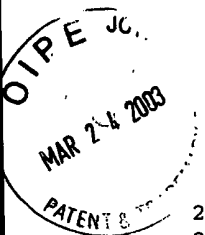
FIGURE 3H



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

24801 CTAGTTGTGC CTGAGAGTTG CTGTTGTTCC TGCTTTCCCT TCCCTTCCTT
24851 TCATCCCCCTG AAGGGCTAGG TGTGGGTTTT CCGTGCCCGG TATCCCCACA
24901 CACCCAGCAC GGACAACCTT TCGGCAGAGC CCAGGCCGGC CCTCACCCC
24951 CTGGAGTATT GAAACTGGAG TCCCGTCCCC AAGGCCTTCA GAGATGCCCC
25001 TACACACCCA GGGCTCCAGC TCTGGTCCCT CTGGGGGAGT AAAGTGCAAA
25051 GAGGGGCACA GCTTAGTTTT GGGCCTCTCG CCGAGCAAGA GACAGCACTG
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26201 AGTGGCTCCC TGGGCCATGG GACAGCGGCA GGGCTACCA CGGACAGCAC
26251 GTGGCCCAGC AGCCGGCCAC CCTGGCGTCC TGGGGCCTCC TCCCCTCCTC
26301 TCCCTCTCAC CTTGTACCT CCACGGAGCT GCCTGTCTGG GATAATTGG
26351 GGATTTTTTT TCTGGGGGAT AATTCTTTTG CATGACCCCT AAAGAGCAAG
26401 CCACACCGGT CTGCTAGCTA GGTGTCCGCG GTGTGGTGGT GGCGGCCGCT
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26501 CCTCTCTCTT TTTGCTGAGT TTCATTGTCT TTTCTTTCTG AGCCTTGTA
26551 GTGTACAAAA ATTATTCTTA TTTTGTCTG TCTCGGAAA CTGCAAAATA
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27151 GTGTGGACAT CAGCCTCGGG CACCAGACAT AGGCAAGGCG CAAGGTGATA
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27401 CTCTGCATCT CCAGCCCAAG CTAAGCGCAA ACTCTTAGGT TGGAGTAAGG
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27501 TGCTGCCTGG CCCCATGGGG CACACGCTCA GGCCAGCCT GGGAAAGCAA
27551 CTGCACCTGC CTGTGCTATG CTGGCCCTTC TCAGCCTCAA TGCCCTCCTC
27601 CCTCCCCGAC GCACCTCGT GGCCCCCGCT GGGCCCCCTG ATGCACCTC
27651 ATGTCTCCAT GGCAACCTGC TCAGAGTGTG GCCCTGCCCT TGGTCCCCCT
27701 CCACACCTGT GTCCAGGCA GTGCCACGGC ACTTCTCTAA ACAGAAGGAT
27751 GGGCTTCAAA ACAGTCCCAG AACTAAACA CACCTGCATT TTGGGTCCAA
27801 GTAACCTCTG ACAAGACGAG TGCCCCTACA CACCCTAGT CCTATCCACT
27851 ATGGGCAAGG AGCCTGAAGG ATCCCCCAGA ACTGGCTAAA GCCCTCAGTC

FIGURE 3I



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

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27901 TCCTCCTCCA CCCTGAGCAC CTTACGCGG CAGAGTGGCC CTGGATGTCA
27951 GCTTCTTGCT CCCCATGGTC TGCACCTGGA CAGGTGCTCT CAGGTGTGTG
28001 GGTGGGCAGG TGGCAGGTCC CAAGAGCCAG GTGCAAAGAA TCTAGGCCAG
28051 TGCCACAGAG TGCTGCAGTG TCTGTCCCA GCATGGTATC TAGGGCTCCA
28101 CTTGCCTATC AGCTGTAATC GGAGGAGGCT TTCCAGGCCA GGCCTCCCCC
28151 AGGAAGGCTG CAGGCACTGC GGATCGTGCG CCCTCACATG CATTATTCTT
28201 GAGGCCCTTC TGCAGATGCC ATCAGGGCAG CAACTCTGAT GAGGTATTAG
28251 GGCACAGCAC ACAGGGCTAA GCCACCCTGT ACTGGGCCAA GCGCTACAGG
28301 CAAAAAGGAC ACCACCGACG GGCATTTCAT TCATCGCTTT TATTTTATA
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Intron: 2066-3015
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Intron: 3059-4102
Exon: 4103-4177
Intron: 4178-9088
Exon: 9089-9126
Intron: 9127-9303
Exon: 9304-9375
Intron: 9376-10898
Exon: 10899-10943
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Exon: 17131-17133
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Stop: 23706

CHROMOSOME MAP POSITION:

Chromosome 7

ALLELIC VARIANTS (SNPs):

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496	T	C	Exon	58	L	L
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1785	T	A	Intron			
1889	A	T	Intron			
2416	C	T	Intron			
4698	A	G	Intron			
5424	C	T	Intron			
8722	C	A	Intron			

FIGURE 3J

O.I.F. = J.C.
MAR 2 4 2003
PATENT & TRADE MARK

Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

9982	G	A	Intron			
10951	C	T	Intron			
12603	T	C	Intron			
14583	C	T	Intron			
17290	T	C	Intron			
18188	C	T	Intron			
19911	A	G	Intron			
21328	C	A G	Intron			
21391	T	C	Intron			
22588	C	T	Intron			
22965	-	G	Intron			
23498	G	A	Exon	312	R	R
23663	T	C	Exon	367	S	S
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Context:

DNA

Position

487

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[T, C]
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(SEQ ID

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[T, C]
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(SEQ ID

NO:6)

1662

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[T, C]
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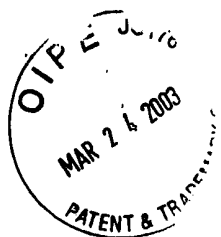
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NO:7)

1785

CTGACCATCAACCCTGCCAAGCGCATCACAGCCCATGAGGCCCTGAAGCACCCGTGGGTG

FIGURE 3K



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

- NO:8) 1889
TGCGTGAGTCGCCCTTGGTGCCCATGGTGGGGAGGGGGCTCCTGGTGAGATGGCCTCAG
ACCACTCCCCCTGGCAAGGACCCCAAGAGGGTCTGTCTCCTGACATCCAAGAGCTCCCTTG
GGTCCCCTGGGTGCTCCTTGTGGCCTCTGGCTTGGGACATACCAGCACGTTTGTGAGGCC
TGGGGCTTGAAGGCATTAGAGGGTAGAGGTGATCCCTTCCCACTGCAGTCTGTG
[T, A]
GTGAGGGGAGAGTGGACGAGGCAAGGGAGAGACGAGTCTTGAAGTCCCAGGCGGGTGGG
GACAGACAACCTTGCCGCAATGGTGGCCGGTGGCTCTTGGCAAGTGGGGACCCCAAGGT
GCCACAAGCCTTGCCACCTTGCCCTCTCCCTGTGCTCGGGCTCGGCTGCCATATGACC
ACCCATTTCCCCACAGCAACGCTCCACGGTAGCATCCATGATGCACAGACAGGAGACTGT
GGAGTGTCTGAAAAAGTTCAATGCCAGGAGAAAGCTCAAGGTGAGGCCCTGGCCCCCTAGT (SEQ ID
- NO:9) 2416
GTGGAGATGGCCTCAGACCACTCCCCTGGCAAGGACCCCAAGAGGGTCTGTCTCCTGACA
TCCAAGAGCTCCCTTGGGTCCCCTGGGTGCTCCTTGTGGCCTCTGGCTTGGGACATACCA
GCACGTTTGTGAGGCCTGGGGCTTGAAGGCATTAGAGGGTAGAGGTGATCCCTTCCCTCC
CAACTGCAGTCTGTCTGTGAGGGCAGAGTGGACGAGGCAAGGGAGAGACGAGTCTTGA
AGTCCCAGGCGGGTGGGGACAGACAACCTTGCCGCAATGGTGGCCGGTGGCTCTTGGCA
[A, T]
GTGGGGACCCAGGGTGCCACAAGCCTTGCCACCTGGCCTCTCCCTGTGCTCGGGCT
CGGCTGCCATATGACCACCCATTTCCCCACAGCAACGCTCCACGGTAGCATCCATGATGC
ACAGACAGGAGACTGTGGAGTGTCTGAAAAAGTTCAATGCCAGGAGAAAGCTCAAGGTGA
GGCCCTGGCCCCCTAGTCCCAGGCACGCCATGCTTCTGTGTCTCCCTCTGGGCTGGAGCA
GGGGGGCCTTGGGGGGTCTGGGCAGACCTAGGGGTTACTGTGCCCCCAAGACTGACTGT (SEQ ID
- NO:10) 4698
TCTGGGCTGGAGCAGGGGGCCTTGGGGGGTCTGGGCAGACCTAGGGGTTACTGTGCCC
CCAAGACTGACTGTTAGCAAGTCCCAGACTGGATGCATCAGGTGAACCTCAGGCCAGCTTG
GGAATGAGTCCAGAGGGGCCCTGGGCCAGGTGTGGCTCCTCCTAGTTGTCTGTGCCACCT
CCTAGCAGCCCTTGGAGGAGCTGTCTGAAAGCGCTCGCTGTGGGCTCCTCACCCGGGCTC
TGCAGGCAGCACTCACCTCTGGCAGTCACACTGTTTAGTACAAGCAAGTCCGAAGCTTC
[C, T]
GGCTCAGACAGGTTTGGTAAGGAGAGCAGAGCCACACACTGGTCTTGGGTGGGCTGGG
GGAGTTCTGGGAGGGAGGTGGGTCCCAGTAGGGTATCCAACCTGCCTGCTTTGGTCAGGG
CTGGCTCCGGTGACCGCACACTGGCAGTCCCTCTACTTGTGGGTTCGCGGATGGGACTT
GTTGCCTGACTGCCCTCTGCTGGTCTCTGAGCAGTTCTCCCCGGAAGCCCCAGGACTGTT
GCCCTGTCTGAGCCTGTACAGAAAGAAGGGGCTGTACGGGAGCTGGACCCAGAGGAGC (SEQ ID
- NO:12) 5424
GCTAGGTGGCCCCCTGGGCTACACCAAGCCCTTCTGGTCTTGCCCCCGAGGTCTGGGGGT
CCGGAGACCCCATTAAGAATGGCCTGGGCCCCACAGGGAGCCACTGGGCCTGCTGCTGG
GGGCTCTGAATCCTGAAAGGAGAGCCTTGAAGGAGCAGAGCCAGAGAGGCAGAGGCCCTTG
GGCAGACACACACCTTGCCCTCTGGGGCCGATGGAGACGGTGGTCTGTGCTGCTGAG
TCCTACACATGCATGTCTGCCCTGAGCATCCCCCAGGACAAGCCGCTCTGGAGTGGGTG
[A, G]
GGGTTTATGCACCCTGAGGAGACTTTCAAGGCTTCTCTTGGGTGTTTCTGCAAAGTC
CTCCTCCCCTGGCCTCAAACCTGTGAGGGAAAAGGCCGCACTGGCCACCTGCTCCTCT
GGGCTGTGCGGGGCCAGAGCCAGAGGCCAAGTTGGCTTCTGCCACCTGCTGGCTTGT
GACCAT (SEQ ID NO:11)
- 5424
CCTCCTCATGACCCACAGGGTGAGCAGCCTGGCCTTCCCAGCCAGAGAACCCTCCTTCTG
GGGAGGCCCAGGGCGTCTCGGGGAGGGCAGTCTATTCTCCTCCCATGAGCCCAAGTGAC
GTGTCTAGCAGGCAGCACCCCGGAGAGCCCTCCCACGTCTTCTCCATTGACAGGCCCTT
TCCAGAGCGCAGGCGGGAGGGGGCTGTGATTAGAAAAGAGTGAGGCTAGTGGCTTCTGGG
GAGGCACTGCTGCCAGGGGACAGTGTGAGAGACAGCTGCCTCTACGCTGCCCTGTGCC
[C, T]
GGGGCTCCCGCTGCAATGCCCGCCTGTCTGCAAGTGAACGTGGGGCGACGGTGCATGAGG
CCCTGCATGTGTGGCTCCACCCTGGGCGCCGAGAGCAGCTCTGTCTGGAGGGTGGTCAG
TGCATGTGGACAGAGCCAGCATGGCTGTCTTGGGTGACCAGCTAAGGGGACAAGGCAGA
GGCAGGGCTGAGAGGACCCATCCTGCTAGGTGAGCCAGCTCAGCCATATCACACGG
CAGTGAGCATGGAGCTCAGTTCTCTGCCAATGGCAGCTGAGTCTAGTACCATCCAGTCAG (SEQ ID

FIGURE 3L



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8722

AAGGCCTGTGCTGGCCCCAGTCAGTGCACAGAAGCGGCCCAAGGCCAGGGCTGCTGGGC
AGCTCGGAATGAGGGCGAGCAGGGCTGCCCTTGGTGCCTGAGCCAAGGAGCCAATGGGAC
AGACCTCTGAGCCTGGGTGCCAAGTATGAGGTCTGAGACAGGGTGAGCGCCTGGGCTGGG
ACAAGGCCCTCTGAGTGGGCGGCCAGCTGCAGCCCCACCCCTACCCAGGAAGGCAG
GGCCCGGGAGGGCATGACCTCTGGGGTGCTGGCTCAGCTGCCCCACCCCAACCTGACAC
[C, A]
GCTAGTCCTGAGTTCCTATCAGGGAGGAAGCAGCATCCTGCCTTCTCTAGGAAGAGCTT
GCATGTGGCCCCAGAAGCCAAGGGGGCTCCCCAGCACCCACGGGCATCTCTGGGTCTGGTC
AGAGGAGAAATCTGGATGCTTGCAAGAGCCCCAGGGTCATGGAGGAGGCTGGAGACAGGG
CTGTCTGGGGTGATGGGATGGCCCCCACCCTGCTCAGAGCCAGCCTGGGTGCTGGAAC
CACACTTGCCCTCAGGACCCTGGGCTTGCTCCTGGGGAAAGAGTGGGGTCAGGCAAAGGGG

(SEQ ID

NO:13)

9982

CCAGGAGTGTTTCAGGAAGTCAGTGAGGCAGAAGATACCCTCTCCCCACCAGGACCCACC
CTCAGCTCCTCCACCATCCTCAACAGGCCGACCCACAGACCACTCCGAAGGTCTGGCTTG
GTGGGGCTGGGCCAGGATCTGCAGGGGGAACAGCCCATAGTGGCACATTCCACGGCCCAT
GGGGAGACGGGGCCACGGTGGTGCAAGTAGAGAGGTGTCTAAGCCAGTGGCAGCCAAGGGG
AGGGCTTGCCGTACCTCTGTGTTCCTCAGTGCTGCTCTGTGGCTGCCTGAGAGGCAGG
[G, A]
CTTAGGGGCTCCCTGCCGGGAGGGGAGGGGTCCCCACCATGCTCCGCTCCAACCTGCGCC
CCTCAGTGCCCTTGCCCTGGGGGCTCCTACAGGTGAACCTATAGCAGTACTCCCAAGG
ATGTAAAGTTGTGGCTGGTGGGTGCCGGCCTTCTGCTGGGGCGCTGTGCTGTGTCCCT
CAGCTGTCTTAAGAGCTTTGGGGCTTGCTGGCCCGTAGGTCCCCATATTGTCTGGAAGCA
GGCTTGGTGTCCCTGAGAACCCAGGCCAGGCTTCGGGAGCCAGCCCCAGACCGCCAC

(SEQ ID

NO:14)

10951

ACAGCAGCACCTCCGCCAGCCTGGACAGAGCTCCTGTCCATTCCATCCCTGCCGGCTGAC
CCAGGCTCCTCCCCAGCTGCTCCACGCCGCTCCATCCCTGTCCCCCACTCTGCTCTGC
ACTTCTTTCTCGCAGGCTCTGGCCACCCACACCTCCTCTGTCTCCCTGTTCCCTCCTGG
TGGTCTCCGCTTCTCCTCTTCTCACTTTCCCTCTCTTCTCCTCTGTGTCTCTCTTC
TTCTGTAGAGCCTCAAACCAACCGTCATCCATAACCCAGTGGACGGGATTAAGGTACTGC
[C, T]
CCACTTCTCCTCCCGCTTTCCCCAGGCAGGAGGCTCCAGGCCAGGAGAGGTCTGGG
GCAGCATTTGTGCCAGAGTGGAGGGCAGATGTCCATGGCCCTGGCCGCCCCCTCCCCGCA
GTACGGTAGGGCCCCAGTCCGTCTTCTGTTGGCAACAACAGGACAGACTGGCTCAGGCCCC
AGCGCGCCCCCTGGAGGTGCTTGGCACAGTTGCGCCCCGTCCCCATGTGGCCGACACTCT
CAGACCAGGGCTCTGCGTGTCCACCTACGGCAGGCAGTAGGGCTTCTGAGGTCTGGAG

(SEQ ID

NO:15)

12603

AGTCTCTCTGCCAGGCTCATCTTGCTGGGAGAAGTGGAGCCCTCATGTGTTGGGGATGCA
GGGTGGCCACAGCACTAGGGTGGCAGGGCCGGCCTCGGACTCCGTGCCAGCCTGTGCTGG
CTGCCGTGAGAAATGCACCCCTGGTGAGGGGCGCCCTCCAGGGACCAGCACAGAACTGGGT
GTCTTCTCCGGTCACTGCCCATGAGGTCCACAGAGCTGGGGCCCTGCAGCCGCCAGAGG
GCATGTCCCCTGAGCCCCCTGGCCTTTAAGCCCCGTGGAAGCAGCCGAGGCAGAGATCAGC
[T, C]
TCAGAGCCTGGGCTGGTCTTGACACAGGCCACGCCCTGTCCACCTGCCCTCAGCCACGTC
CCACCTATCCTTGGCCGCATCCTGACCCGCTGCCCTCCCGTGTTCCTCAGGAGTCTTCTG
ACAGTGCCAATACCACCATAGAGGATGAAGACGCTAAAGGTACCTGCACTTGAGTCCTTG
CCCCCCCAGCGGCTTGGCATTTGCTGGGTTGCTCTTTGAGGTGGGTGGGACTTGGGCAGG
GTCAACTCTCCTGCGACGCCTAGTTTATGCATGTGTTGAGGGGCTCAGGGACCCTGTAGC

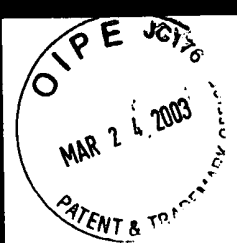
(SEQ ID

NO:16)

14583

ACATCCTGAGCTCAGTGAGGAGGGGCTCGGGAGCCCCAGAAGCCGAGGGGCCCCCTGCCCT
GCCCCATCTCCGGCTCCCTTTAGCCCCCTGCCAGCCCCATGTAAGTAGCCTGGGTCTGTCT
GCTGTGGGGGTCTGTTGGAGGGCTGGCAACCCCTAGAGGGGCCACTCCAGAGCCGAGG
GCAGGCTGAGCGTGGACCCTGGCTCCAGCCTCATACCCCAACAATCCCTCACTGGGGCTT
TCCAGGGTGGCCCCAGCCCATCGAGCCCCACCTCTTTGTGAGGAGGGCCCTGGACCCTT
[C, T]
CCTGCTCAAGGCCACTGGGCAGGATGGGAGGCCCTGGAGGCTCGGGCCTCAATTCCAGTC
TTTCAGGGTCCGTGCAGGCCTCACTCCACCTCAGCTTGCGGGCGGGGGGCTCCCTGCTAT
TGAGGCAGGCTCTGATTAGGGCCTGATCCCAGGGCCCCAAGGGGTCTAGAACACGGGACC
CCTCCCACTGGCCTCCTCCGCTTGCCGCGCCCTCGTGTGTCTGTCTGCCTCATGTTAC

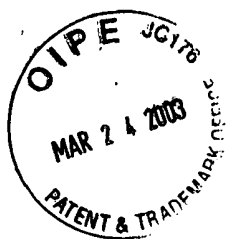
FIGURE 3M



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

GTCTCATCTGTTCCACCCAGCCCCAGGGATCTCTGACATCCTGAACTCTGTGAGAAGG (SEQ ID
NO:17)
17290 CTGTCCCCTTGTGCCCCATCCCCACATCTGCTCTGTGCCCCCTCAATCTCTGGCTTGGC
TGCTGCCCCATGGTTTCTCTCCTGCGTGCCCCCGTGCTGCTTGTGTTACGTCTCGT
CTGTTCCGCCCCAGCCCCAGGATCTCTGACATCCTGAACTCTGTGAGGAGGGGCTCAGG
GACCCAGAAAGCCGAGGGCCCCCTCGCCAGTGGGGCCCCCGCCTGCCATCTCCGACTAT
CCCTGGCCCCCTGCCACCCCATGTAAGTAGCACCTTGAGTGGCCGTGGCAGCGGCTGCC
[T, C]
GGAGGGGCTCGGGGCGTGCGAGCCTGGCAGTGGTGCTCTGGGAAGGGCCATTCTTGCGGA
GGAGGGCGGGGCACAGGATCCCTCTGCTGGGTCCCAGGGAATTGCTTTGAAGCACATGAA
GGTGCCACTGGGTCTCAGAAAATGGAGGTTATGGTTATGAAGTGTGTATGACATATGTGT
ATAGGAAGAGCGTCCGAAAGAGCAGGTTTGTGCCGACCCAGCATTGCAACCCTGAGG
TCCACAGCTTTCTCCTGATGGGAGGGGAATGGGTGGCAAAGGTCTGCGCGTGTGGCAAG (SEQ ID
NO:18)
18188 ATCCCAGGGCTGCTGCCACCCACCTGTGGGGAGACACCAGACTGGGGGTGGTGTGGAG
ATACTCTTAGAGAAGAGGCTGCTGGGCCACGGGCTCGGCATGGCAGGGCAGTGGCTAGGT
AAGTACTTGAGGGACAGGTGGGGTCTGCTTGCCACCGTCCCCTCTGCAGGCTGGGCCTGG
GGGCTGCTGCAGGCGGCCAGGGCAGAAGGTGTGGGGAGAGTGAACCCACAGGAGCAGCG
GCTCGAGGAGGGGATGCAGGCTGCAGGCTCAAAGGGGCACTGGATCCACCCTGGGTGCC
[C, T]
GAGAGAGCAGGGGGCAGCCCCCTGGAGGGGTACTCACCCCCAGAGCTTCTGTGGTGGCTG
AGGACCCCCAGCAGGGGTTGACTGAGGGGATCAGAGGCAAGCAGCTGAGGGGAGAGGCCA
GGTTCTTGATGCTGATAGGGTTCGGGGTGCTGGGGCAGCAGAACTCAAGGAGGGAGGCAT
GGGGAGGGGCGCCGTGCAGCTGGGGTGGGTGCACCGCAGAGCCTCTGGGAGTGGTCTAGA
ACCCCGACACCTGCCACTTCTACAGCAGCTCATCTGATTTTAAGGGGCTTGCTGCCCTT (SEQ ID
NO:19)
19911 AGCAGCGTTACCACTCTTGATTGGAACCTTGACCATGCATCTCCTCTTCTGTTTACTTCA
CGCTTTCTCTTCCCATCACTCCCATTTTAATTACAATTTGTTTAAAAGCACTGCATATT
ACTTCATTAACAGAAAGATTAGTTTCACTTACCATTAGTGTAAGGTGACTATAGAACCAA
AGCAGACTGGAAACCAATGACATAATGTCTTCTCTCCATTCCAGCTGCCTGCTGC
TGTGCGCCTGAGAACCCCTGTGGAGTGGGAGGGGCAGCTGTCTCTGTACATTAGAAAGGG
[A, G]
GGTTAACTAAGTGACAGGAGGTGTTTGGGACATGTGGACACCAGACTTCTCTCTTGATGC
AAGGAGGGCAGAGCCAGGCAGCCTAGTGGGGGCTGGCTTGGGGGCTGCTGGAAGGACTGG
CTACAGGTGGAAGAGAGGTGACACCTGAAGCTTGGGGCCACCTCCAGGAAAGGACAGGTG
AAAGTGGAGGCATGAGGCAGGGGAGAGGCAGGTGCCAGGCAGAGGGTGGAGAGGAGGCAG
GAACATAGCAGCTGGGGCGGGGCGGGCCCTCAAGTGTCTATGCTACTTTCTGGGGCC (SEQ ID
NO:20)
21328 GCTGGGCACAGTGGCTCATACCTGTAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGAT
CACTTGAGGTTAGAGTTTGAGACCAGCCTGGCCAATATGGTGAAACCTCATCTCCACTA
AAAATATACACACAAAAATTAGCTGGGTGTGGTGGTGTGCACCTGTAGTTCAGCTAC
TCGGGAGGCTGAGGCAGGAGAATCGCTTGAACCTGGGAGTCAGAGACTGCAGTGAGCCGA
GATCATGTCACTGCACTCCAGCCCGGTGACAGAGTGAGACTCCATCTAAAAAAAAAAAA
[C, A, G]
AATTCCTCTCTGGGAATTTAGACCACAGACAGGTTGCATGTATGTGGCCGTTGGAGGC
AGCACTCACAGCAAAGAGTGGAAACGTCAACACAGGGCCTGCCTTCTGGTGAAAATGGTG
TCCTGCAGGGCGGGCAGCTGTTTGGGGCAGGTGTCCAGGTGCGGCCTGCAGCAGCCTG
AGGGTCACAGAGCGCAGTGTGGGAGTGCAGAGACTTCCCCACAGGGAGAGTTCCAGG
AACCTGCTTCCGGTCACTTCTGGGGGTTTGAAGTTTTTCCACGGACGAATTACTTTGAG (SEQ ID
NO:21)
21391 TTGAGGTTAGGAGTTTGAGACCAGCCTGGCCAATATGGTGAAACCTCATCTCCACTAAAA
ATATACACACAAAAATTAGCTGGGTGTGGTGGTGTGCACCTGTAGTTCAGCTACTCG
GGAGGCTGAGGCAGGAGAATCGCTTGAACCTGGGAGTCAGAGACTGCAGTGAGCCGAGAT
CATGTCACTGCACTCCAGCCCGGTGACAGAGTGAGACTCCATCTAAAAAAAAAAAAAGAA
TTCCCTCTCTGGGAATTTAGACCACAGACAGGTTGCATGTATGTGGCCGTTGGAGGCAG
[T, C]
ACTCACAGCAAAGAGTGGAAACGTCAACACAGGGCCTGCCTTCTGGTGAAAATGGTGTCC

FIGURE 3N



Docket No.: CL001204
Serial No.: 09/820,790
Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

NO: 22) TGCAGGGCGGGCAGCTGTTTGTAGGGCAGGTGTCCCAGGTGCGGCCTGCAGCAGCCTGAGG
GTCAAGAGCGCAGTGTCTGGGAGTGCAGAGACTTCCCCACAGGGAGAGTTCCCAGGAAC
CTGCTTCCGGTGCACTTCTGGGGTGTGAGTTTTCACGGACGAATTACTTTGAGAAA
CCACTGTACTCGTGTATAGGTGAGCGTGCGTGTGCATGTGTGTTCTGTGTGTGAGTG (SEQ ID

22588 GCTGCTTCCTCCTCCCCGGCCTCCGGGTGGCCTTGCTGACGGCTCCTTCTCTGAGGCAGG
TCTCTGCCTTCTCGCCTGGTGCCTGCACTCAGTAGCCCCCTCACCAGAGCTGCTGGGTGA
AGGAAGCACTAAGAACCCAAGGCTCGGGAGGAGAGTGGGGCCGGGAAGCTGCAGGGAAGC
GCAGGGCCAGGCCTGGTGGGCCAGGGGCTGGCTACGGGAGGGCAGGAGGGAGACTGTG
GCGGACAGCAGTGGGGCCAGGAGGTGACCTCCAAGTGGATTGTGGGTGGGTTTTTGTG
[C, T]
TCTTTCTGCATTTTCCAGGCATTTTGTAAATGTGGATAGAATATTCTGTTCTTCAAAAAT
ACTTTAGTTAAGAAAAATAAGATGGAAGCTGTTGCACTTGAAAAATGAGGAAGCCACTGGT
GATGCAGGGGGGGCGCGGAGAGGACCTCTTCTGCAAATAGCGGCAGGAACACGGCATGG
ATGCAGCTCGCGTCCCCAGGCCCTCCCCTGGGCTGTGTGGAGGGGTCCGGGGGGAATG
GGCCAGCGCCAGTGGTCACCTGGCCATGTCTCCCCACAGCCCGGAAGCAGGAGATCATT (SEQ ID

NO: 23) 22965 ATAAGATGGAAGCTGTTGCACTTGAAAAATGAGGAAGCCACTGGTGATGCAGGGGGGGCGG
CGGAGAGGACCTCTTCTGCAAATAGCGGCAGGAACACGGCATGGATGCAGCTCGCGCTCC
CCCAGGCCCTCCCCTGGGCTGTGTGGAGGGGTCCGGGGGGAATGGGCCAGCGCCAGTGG
TCACCTGGCCATGTCTCCCCACAGCCCGAAGCAGGAGATCATTAAAGACCACGGAGCAGC
TCATCGAGGCCGTCAACAACGGTGACTTTGAGGCCTACGCGTGAGTCCCTGGGGCTGGGG
[-, G]
GGGGCTGTGCAGGACAAGGATGTGGGACCCCTTGGGGGGCCTGCTCAGAGTCAGGGGTCC
ACGGGGCCCCCTCCTCACTTGGATTTGGCCCCCAGGAAAAATCTGTGACCCAGGGGTGACCT
CGTTTGAGCCTGAAGCACTGGGCAACCTGGTTGAAGGGATGGACTTCCACAGATTCTACT
TCGAGAACCGTGAGTGAGGAAGCCCGGTGGGCATGAGGGGGCGGTGCCCCAGGAGAGC
CTCTCGGCCCTCCCAGGACAGCATGGTGGCTGCCTATGGAAGCCCTGTCCCCTCTGTG (SEQ ID

NO: 24) 23498 CCCGCCAGAGGCCATACCCAGCCCCCAGAATCCCCTCTTGGAGGGGGCCATGCTGCTCC
CAGGAGAGCCGAGCCTCCCCAATAAGGGGAGTTGAGAGAGGGAAAGGATTAGGCTGGTGG
GGTGAAGACGGGCACCGGAGGAGTCAAGTAACCCGAGACCCCGCCCGCCTGCTGTC
CACAGTGTGGCCAAGAACAGCAAGCC
[G, A]
ATCCACAGCACCATCTGAACCCACACGTGCACGTGATTGGAGAGGATGCCGCCTGCATC
GCTTACATCCGGCTCACGCAGTACATTGACGGGCAGGGCCGGCCCCGACACAGCCAGTCT
GAGGAGACCCCGCTGTGGCACCGCCGACGCGCAAGTGGCAGAACGTGCATTTCACTGC
TCGGGCGCGCCTGTGGCCCCGCTGCAG (SEQ ID NO: 25)

23663 GCCTCCCCAATAAGGGGAGTTGAGAGAGGGAAAGGATTAGGCTGGTGGGGTGAAGACGG
GCACCAGGGCAGTCATGGTAACCCGAGACCCCGCCCGCCTGCTGTCCACAGTGTGGC
CAAGAACAGCAAGCCGATCCACAGCACCATCTGAACCCACACGTGCACGTGATTGGAGA
GGATGCCGCTGCATCGCTTACATCCGGCTCACGCAGTACATTGACGGGCAGGGCCGGCC
CCGCACCAGCCAGTCTGAGGAGACCCGCGTGTGGCACCGCCGACGGCAAGTGGCAGAA
[T, C]
GTGCACTTCCACTGCTCGGGCGCGCCTGTGGCCCCGCTGCAGTGAAGGTGAGTGTCTGT
GCTAAGTGACAGCTGGGGCAGAGGGGTGGCGGTGGTGTGAGTGGCTGCAGCCTGGGGAGG
CGATGGGGAGCGGTGGGGCCTGTGGCAGAGCCCATGCCTGGGAAGTCCCTGAGCTTTCTT
GGTGAGGCCACAGGAATGATGTCAAATTAGGGACCACGGCAGGCTGGGTGTGGCAGGCCT
CCCCAGAGGACTGGGGAGCTGGTGGGGCCTGAGCAGTCCACTGGCCAGAGCTGGGTG (SEQ ID

NO: 26) 25427 TGTGGCAAGAGGACTCTGCCTGGGTGGCCCCCTCCTGTGTGAGGTGTCTGTCCCTTCT
CTGCTGGCCAGCAGCAGATGCACTGGCAGCTCCCAACCCTGTTTCCGCCCCCTCGGCCCTC
CCCCAGCCTGTTTCGGTCTCTCTGCAGCCCGCAAGGGGGAGCAGACTTTTGACAAAGGACT
GCGGGCCTCGCTCAAGTCCCTGAGCCCCCAGCTGAAGCTGGGAGGGGAGGCCAGGCTTTG
TGTCTGGGCATATTCTGTCTGATGGGGTTTGGGAAGCCTGGGGCTTGGGGTTTGGTCT
[A, G]
GGTGGTGCAGCTAGTGGCAGAGCGGGATCAGAGGTGGTGGCTGCCAGCTTCTGGGCTGA

FIGURE 30



Docket No.: CL001204
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Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

NO:27)

27727

GACAAGGGTCTGTGCAGGGGTTTACTGAAGTGGGAGTGCCTTTGGAATCTGGGCCGGGAG
CAGAAGGGAGCAAAGCTACAGTGGGAGCCAGCCTAGGGCACATGGGAGGCGTGAGGGCA
GTGCTGCCCCGTGCAGTGTGAGGTGTGCCAGTGCCTTGGCGGGCTGCAGTGCCTGTGAGGG
CACCTTCTAGGTGGGCCAGGGATGCAGCTATGGAGATAAGGCGGGCTGGGGACAGAAACA (SEQ ID

NO:28)

27834

GCAAACTCTTAGGTTGGAGTAAGGAGTAACCCCTGCCAAGTTTCTCCTGTCTCAGGCT
CCACCCACCACCTATGCTGCCTGGCCCCATGGGGCACACGCTCAGGCCCAGCCTGGGAAA
GCAACTGCACCTGCCTGTGCTATGCTGGCCCTTCTCAGCCTCAATGCCCTCCTCCCTCCC
CGACGCACCTCGTGGCCCCCGCTGGGCCCCCTGATGCACCTCATGTCTCCATGGCAAC
CTGCTCAGAGTGTGGCCCTGCCCTTGGCTCCCTCCACACCTGTGTCCAGGCAGTGCCA
[C, T]
GGCACTTTCCTAAACAGAAGGATGGGCTTCAAACAGTCCCAGACACTAAACACACCTGC
ATTTTGGGTCCAAGTAACTTCTGACAAGACGAGTGGCCCTACACACCTCAGTCTCTATCC
ACTATGGGCAAGGAGCCTGAAGGATCCCCCAGAACTGGCTAAAGCCCTCAGTCTCCTCCT
CCACCTGAGCACCTTCACGCGGCAGAGTGGCCCTGGATGTGAGCTTCTTGCTCCCCATG
GTCTGCACCTGGACAGGTGCTCTCAGGTGTGTGGGTGGGCAGGTGGCAGGTCCCAAGAGC (SEQ ID

NO:29)

CCAGCCTGGGAAAGCAACTGCACCTGCCTGTGCTATGCTGGCCCTTCTCAGCCTCAATGC
CCTCCTCCCTCCCCGACGCACCTCGTGGCCCCCGCTGGGCCCCCTGATGCACCTCATG
TCTCCATGGCAACCTGCTCAGAGTGTGGCCCTGCCCTTGGCTCCCTCCACACCTGTGTC
CCAGGCAGTGCCACGGCACTTTCCTAAACAGAAGGATGGGCTTCAAACAGTCCCAGACA
CTAAACACACCTGCATTTTGGGTCCAAGTAACTTCTGACAAGACGAGTGGCCCTACACAC
[T, C]
CTCAGTCTCTTCCACTATGGGCAAGGAGCCTGAAGGATCCCCCAGAACTGGCTAAAGCCC
TCAGTCTCCTCCTCCACCTGAGCACCTTCACGCGGCAGAGTGGCCCTGGATGTGAGCTT
CTTGCTCCCCATGGTCTGCACCTGGACAGGTGCTCTCAGGTGTGTGGGTGGGCAGGTGGC
AGGTCCCAAGAGCCAGGTGCAAAGAATCTAGGCCAGTGGCCACGAGTGTGTCAGTGTCTG
TCCCCAGCATGGTATCTAGGGCTCCACTTGCCTATCAGCTGTAATCGGAGGAGGCTTTCC (SEQ ID

FIGURE 3P



28336

Docket No.: CL001204
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Inventors: Wei SHAO et al.
Title: ISOLATED HUMAN KINASE...

AAGAATCTAGGCCAGTGCCACGAGTGCTGCAGTGTCTGTCCCCAGCATGGTATCTAGGG
CTCCACTTGCCTATCAGCTGTAATCGGAGGAGGCTTTCCAGGCCAGGCCTCCCCAGGAA
GGCTGCAGGCACTGCGGATCGTGCGCCCTCACATGCATTATTCCTGAGGCCCTTCTGCAG
ATGCCATCAGGGCAGCAACTCTGATGAGGTATTAGGGCACAGCACAGGGCTAAGCCAC
CCTGTACTGGGCAAGCGCTACAGGCAAAAAGGACACCACCGACGGGCATTTATTTCATC
[G,A]
CTTTTATTTTATATATTTTTTGAGAGGGAGCCTCACTCTGTGCGCCAGGCTGGAGTGCAG
TGGCGGATCTTGGCTCACTGCAACTTCTCCCTCCTGGGTTC (SEQ ID NO:30)

FIGURE 3Q